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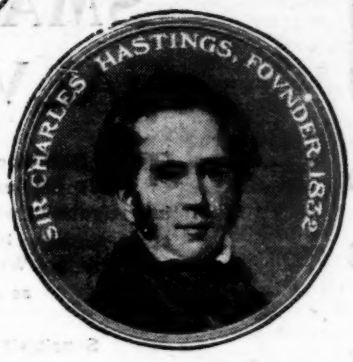

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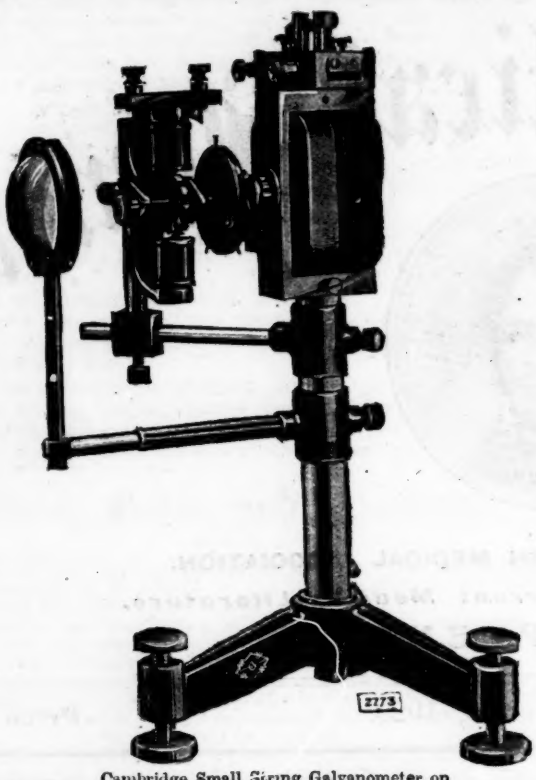

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An Address
ON
THE PROBLEM OF SUCCESS FOR MEDICAL WOMEN.*

BY
Sir HUMPHRY ROLLESTON, K.C.B., M.D., D.C.L., LL.D.,
PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

That the rapid progress made by women in the medical profession in the recent past—for it is scarcely fifty years since in October, 1874, the London School for Women was opened—does not continue to be so dramatic has no doubt led to some disappointment. But the changes have been so great that a little consideration of their significance will show that it is not only natural but advantageous that the period of upheaval should be followed by an interval of calm for efficient consolidation of the position. There is indeed a special need for emphasizing this at the present time—namely, the influence of the war; many of both sexes imagined that a millennium would follow, and perhaps women, with their more vivid imagination, and with the stimulus of the just recognition of their recent work in the war and the granting of the franchise as further reasons for high hopes, are less inclined to possess their souls in patience. The number of women members of Parliament is disproportionately small to those who have votes under the women's suffrage (1918), and shows that a rapid change is not necessarily succeeded at once by what may appear to be its logical sequence. Samuel Johnson's line "Slow rises worth by poverty depress'd" is perhaps not without its application and comfort.

The question of the need for, existence, and spheres of usefulness of women doctors is so far settled that further discussion would serve no useful end, and it is unnecessary to insist on the openings in private practice, and especially on the suitability of women for official posts in the various branches of the public health service and in India. But the present is an anxious time for the whole medical profession; the proportion of medical practitioners to the general population is now greater than at any period during the past fifty years, and since 1914 the number of women entering the profession has greatly increased. Thus to take figures kindly given me by Professor R. B. Wild: at the Victoria University of Manchester out of 153 women medical students entering between 1899, when women first entered, and 1918, not fewer than 105, or 67.8 per cent., started during the war. During and immediately after the war their services were much in request on account of the absence of men with the forces, but now with the number of men available the conditions have altered; indeed the competition for advertised posts plainly shows that the supply has more than overtaken the demand. No doubt the rush into the profession after the war carried in a number of entrants not so well equipped as in the past, and particularly in the case of women students, who in former times were "picked" and in more deadly earnest than the men students. This approach to overcrowding is probably a temporary state of affairs, for the peak of the wave of entries into the profession, though not that of qualifications, has passed. Nevertheless it must be recognized that our profession should be regarded as affording opportunities for a fine and ennobling life rather than a means of attaining ease and opulence. It is probably still true that it is easier to get a living of a sort in medicine than in the other learned professions, but as a trade proposition it takes a very humble rank. This, no doubt, applies with greater force to women's than to men's remuneration, and here, as will be suggested later in another connexion, the influence of tradition plays no inconsiderable part, for the lay public as a whole has not yet become accustomed to medical advisers other than those of the male sex. In maintaining the principle that sex should not make any difference in the emoluments of the medical profession the British Medical Association has led the way and supported the Federation of Medical Women.

On an occasion such as this, when you are all looking forward to "the dim mystic future" with hope tinctured by uncertainty as to your prospects, speculation is inevitable as to the changes and chances that beset the individual, and the personal characteristics, the opportunities, and accidents that determine success or failure. It may perhaps be opportune to examine briefly the difficult question of the factors bearing on the probability of success, a consummation capable of very various interpretations, for women doctors. This will involve some reference to the inherent properties of sex, incidence of genius, originality, and other mental characteristics, physical capabilities and health, and environmental influences.

Since the time of Darwin it has been recognized, though not without protest (Karl Pearson), that variability, both in body and mind, is more frequent in the male than in the female sex, so that genius, originality, and initiative, as well as idiocy and crime, are more frequent in men than in women, who tend to preserve a more equable level; men have a greater aptitude for abstract problems, women for concrete subjects.

Now taking into account only the factor of the vastly greater number of men than of women in the medical profession and remembering the relatively small percentage of men of outstanding ability that it has produced, it is surely not surprising that women doctors have so far not numbered among them any to rival Lister, R. Koch, Osler, and Horsley. Further, the number of women who give up the pursuit of medicine, before or after qualifying, is probably relatively much greater than in the case of men, mainly because marriage seriously depletes the ranks of women doctors; further it is widely held, though statistical proof of this would be difficult, that it is the ablest who thus fall by the way. It has been stated (Louisa Martindale) that 30 per cent. of all women doctors marry either before or after qualification, and, though what proportion of these retire from active practice is not known, it commonly must act as a handicap to women, whereas it is of necessity a stimulus to male practitioners. But to return to the sex incidence of genius—that extreme natural variation—there is, as just pointed out, the additional factor of greater uniformity among the female sex to reduce the probability of the occurrence of phenomenal ability among them.

Study of the world's history has convinced Mathilde and Mathias Vaerting, whose remarkable book *The Dominant Sex, A Study in the Sociology of Sex Differentiation* has recently been translated into English, that the relationships of the sexes as regards dominance vary in a manner resembling the swing of a pendulum; in a few instances women have had the upper hand, as in ancient Egypt, Sparta, the Garos in India, and the Iroquois; in the vast majority of nations, of course, men have been predominant, and very exceptionally the rights of the sexes have been nearly equal, as in the State of Wyoming; during the phase of male predominance there has been a conscious or unconscious tendency to obliterate the evidence of former feminine dominance, or, expressed more generally and at the same time more forcibly by the Vaertings, "history is perennially falsified by the prepotent ideology of the dominant sex." In nations under feminine dominance the woman supported the family and went out to work while the man was the housekeeper and domestic drudge; such division of labour is not ascribed to biological or physiological differences but depends on the dominance of sex; in fact the women of a nation in which the female sex is dominant become from the attendant circumstances physically fitter than the men, and the notion that inborn physiological differences between men and women determine the usual superiority of the male is argued to be due to confusion between cause and effect.

The force of tradition and the suggestion that man is the dominant partner is not easy to estimate accurately in regard to medicine; auto-suggestion may well be of some importance; but that a woman doctor would consciously abstain from research and striking out a new line because it is commonly regarded as peculiarly a man's sphere seems

* Delivered at the London School of Medicine for Women on October 1st, 1923.

improbable. Nevertheless the tradition of maternal ancestors (feminine heredity) and its social influence on the early life of a generation that has witnessed the wide opening of careers to women cannot be neutralized at once, and its effects may persist for some time. That women as a class are inherently more law-abiding, more subject to what they regard as conventional, and more conservative might reasonably be interpreted as the outcome of long-continued subordination to men's ascendancy. More than a hundred years ago Sydney Smith[1] laughed at the idea that there was any inborn difference of intellectual capacity between men and women and argued that the conditions of education were entirely responsible for the existing differences. Further, in the Report of the Board of Education's Consultative Committee on the Differentiation of the Curricula for Boys and Girls respectively in Secondary Schools (1923) the opinion is expressed that there is little difference in intellectual capacity between the two sexes, though there are noticeable divergencies in emotional response as indicated by the degree of interest evinced for various studies, and that on the whole the apparent differences revealed up to the present by psychological inquiry would not seem to justify any serious differentiation in the actual curriculum.

It is obviously important and equally difficult to apportion accurately the influence of environment, tradition, and suggestion on the one hand, and hereditary and inborn tendencies on the other hand. The circumstances of women doctors and students of medicine, though infinitely better than sixty years ago when the struggle for any opportunities at all was in progress, are even now not so good as those of men; for example, the hospital facilities and appointments open to them are still restricted as compared with those of men. On the other hand it must be remembered that some of the best work done by men has been accomplished in the most unpromising surroundings; and it has been truly said, "genius does what it must, talent what it can."

Though much less than in the past, the sexes still lead different lives; girls are more prone than boys to follow an indoor and confined routine and so to impair or retard a robust physical development; and thus sexual peculiarities are accentuated. The physiological disabilities arising out of sex must be taken into very serious account as a weighty factor in determining women's chances of a successful struggle in intellectual work and practice of the profession of medicine. In 50 per cent. or more of women the monthly rhythm is a distinct handicap, and its manifestations are prone to be aggravated by a sedentary life and other factors prejudicial to a vigorous state of health, factors often inseparable from the life of a hard-worked doctor in town or institutional practice. For the greater part of their active life a large number of women are liable to recurrent interruptions in their state of efficiency and are thus at a grave disadvantage as compared with their male competitors; among men migraine, which might be regarded as comparable in its periodicity and effects, is relatively so rare that it rather tends to emphasize the reality of the women's burden.

Women have in a more developed degree than men the power of rapid perception or intuition, allied to second sight and clairvoyance, or of arriving at a correct solution of a problem *per saltum*. In his *In Defence of Women*, a book published in 1923 and in many respects Shavian in its daring, H. L. Mencken insists that so-called women's intuition is a high-grade form of keen intelligence which is rare in men and is then only found in men of special talent for the logical. Now this property—which is said never to have led to any discovery in science (Ludovici[2]), though both Darwin, who it is true silently spent twenty years in working it out, and A. Russel Wallace arrived at the conception of evolution by a flash—appears to be closely allied to imagination, which by providing possible explanations opens the road "to search and study out the secrets of nature by way of experiment." But apart from its potential use and application in research this faculty of arriving immediately at a correct opinion without the process of conscious ratiocination resembles the clinical instinct born of long years of experience and no doubt a function of the unconscious, which is so invaluable in diagnosis and prognosis; hospital sisters often have this power, and when reinforced by a more extensive scientific training it should be an asset of women doctors.

The ability of women medical students has been abundantly shown by their distinctions in examinations. It may be interesting to compare the percentage of qualifications among men and women entering the medical profession. Sir James Paget's well known analysis in 1869 showed that of 1,000 medical students at St. Bartholomew's Hospital, 776, or 77.6 per cent., actually qualified; of Sir Squire Sprigge's smaller series of 250 students in the early eighties from St George's Hospital, 187, or 75 per cent., qualified. Miss L. M. Brooks, your warden, has kindly analysed for me the results of 700 students entering the London School of Medicine for Women between October, 1894, and July, 1914; of this number, 593, or 84.7 per cent., completed the qualification for which they entered; this proportion is much the same as that (about 85 per cent.) arrived at by the General Medical Council in 1907, and that (87 per cent.) of the students entering St. Thomas's Hospital in the years 1890-1899 (Edred Corner). As far, therefore, as these few figures go, women students have held their own. It is satisfactory to learn that the death rate during pupilage, which in Sir James Paget's series was 4 per cent., was halved in Sprigge's and Corner's series and was little more than 1 per cent. (8 in 700) among the students of this school.

Though a high place in the class list provides a good start and is *prima facie* ground for anticipating success in after life, it is of course no guarantee for women students any more than it is for men. Although many prize winners continue to be front rankers, early success is not without its possible danger; it may breed conceit and slacken effort, so that the highly placed may become extinguished by their distinction. An early failure is sometimes a blessing, however much it may be disguised. Another consolation for those who fail to find favour with examiners is that some students develop late and so at first do not compete on equal terms with their more brilliant rivals, though eventually they surpass them in the race of life. To the make-up of a capable medical practitioner professional knowledge is not the only property necessary: practical efficiency, presence of mind, wise discretion, sympathy, and a thorough understanding of human nature are other essentials. Academic success may be obtained by mental ability, industry, and a temperamental power of making the best of knowledge thus acquired. Book knowledge may therefore go further in the examination room than in the daily round of practical life.

Women are on the average better students than their brethren, they work harder and take more pains, being more whole-mindedly concentrated on the subject in hand—so much so, indeed, that many of them find it difficult to throw off their work for a time and therefore tend to get stale and mentally dyspeptic. The power of detachment, by which mental concentration can be transferred from one thought-tight compartment to another, is of infinite value. Another aspect of detachment was so charmingly painted by the late H. D. Ellis (Poems, Mathematical and Miscellaneous, 1912) that it may be reproduced here, even if it be a little apart from this immediate context:

> "Greatly prize the gift of humour,
> Light divine of human mind;
> Live unmoved by transient rumour,
> Harbour not a thought unkind.
> So will trouble, life's consumer,
> Break, like bubble in the wind."

But to resume, the importance of cultivating a hobby, distraction, or avocation to balance and correct the more urgent claims of professional studies is a commonplace, yet like many dictates of common sense it is often ignored. Literature, music, art, and athletics are not only part of a liberal and humane education, but invaluable as a means of refreshment and of re-creating energy for the business of life. Just as there are burly athletes who never study, so are there pale students who go to the other extreme and thereby endanger their future by undermining both their mental and their physical efficiency. As a class women students are more prone than their brothers to over-

devotion and thus to narrow their intellectual outlook and their chest development; to them, therefore, it is not so necessary to insist on the obvious need for industry, what Sir William Osler in his charming *Aequanimitas* called "the Master-word in Medicine," as to remind them that the best student combines mental and physical prowess, and thus realizes the ideal of the *mens sana in corpore sano*. It has not uncommonly been urged in introductory addresses such as this that hard work alone seldom leads to a breakdown and that worry or some extraneous factor is the real cause; this is a rather overstated, though no doubt admirably meant, exhortation, and is perhaps more applicable to those whose life's work is free from the menace of the examination bogy than to the students, especially women, whose mental vision is too often focused anxiously in that direction. It may be partially true when hard work can be secured from worry, but even then the interference with physical health must be taken into consideration. Much, therefore, turns on how the work is done, wisely or otherwise, and on the physical and mental make-up, so to speak, of the individual; women students especially should remember that there are occasions when the willing spirit should be mindful of the weakness of the flesh, and that as a class they are more liable to mental breakdown from overwork.

There are disadvantages in reading too much; as epigrammatically put by Sir James Kingston Fowler, "if you want to be original you must not read too much." This may sound like an invitation and encouragement to idleness in the face of the enormous amount that medical students have now to assimilate, and really to be a more useful admonition to those who are qualified to practise than to students beginning the rudiments of science. Though at first sight a paradoxical statement, excessive reading may be a peculiar form of laziness in so far as it is a means of escape from that much avoided process of thinking for oneself: how much easier it is to look up at once in a book the solution of a problem than to attempt to worry it out first in one's mind. The real moral, therefore, is to read wisely and to spend time in thinking over and applying to actual cases what has been read, instead of aiming at a facile familiarity with the windy doctrines of many text-books. The danger of over-reading may at first sight seem chimerical, but it largely consists in using up time which would be better spent in thought and practical observation. At the present time radiograms and laboratory tests so greatly assist and often appear to decide the diagnosis that careful study of the patient is in serious danger of being neglected. The experience gained from one good clinical case is worth half a dozen textbook descriptions and is likely to be remembered much longer. The habit of accurate observation is not easily acquired; reading may tell you what to look for, but it cannot take the place of observation which proverbially brings wisdom—a far more valuable property than mere learning. The bookish student may repeat like a parrot the words of the wise without understanding them and break down wofully in practical work. There are several methods of reading, and by far the best is that which is accompanied by thought and by an analytical abstract of what is read; thus impressing the argument on the mind at the time and providing a concise précis of the subject for future reference. It is a mistake to read too long at a time at one subject, for this leads to mental fatigue, to which girls are more susceptible than their brothers.

In the opinion of experienced teachers, such as Professor W. D. Halliburton, while the average female student is on the whole superior to the average male student, possibly because the women who take up science are usually keener and feel a call to do so, the best women students are not so able as the best men students. This estimate indeed is on the same lines as the generally accepted view that true genius is even rarer in women than in men. Now whether this is due to inherent sex peculiarities or is the result of long-continued dominance of the male sex or to both these factors is an academic though interesting question.

It has been stated that each individual contains the potential elements of both sexes, one being of course dominant, though varying in individuals, probably in correspondence with the influence of the hormones from the endocrine glands, especially the gonads. According to Otto Weiniger and W. L. George "there are no men, there are no women, but only sexual majorities." Although this view may not now be accepted and the endocrine glands are now considered to influence emotional rather than intellectual activities, there are most remarkable individual differences among members of the same sex, and everyone has known feminine men and virile women. As all kinds make a world, provision must be made for all, and it is among the masculine minded women that variability tending to the production of genius or of special ability may be anticipated. Perhaps too much stress has been laid on the small number of women doctors who have made epoch-making advances and on the view (correct as it may be) that as a rule women students are less original in mind, less inclined to initiate new lines of thought, and are more successful as conscientious followers than as independent leaders in research. There have been exceptions in the past to any such rule, there are more in the present, and in the future there can be little doubt that women workers will take an increasingly larger part in research, whether independently or under the inspiration of a great teacher. The establishment at the Royal Free Hospital of a whole-time Professor (Dr. Louise McIlroy) of Obstetrics and Gynaecology with a clinical unit is a notable step in advance and offers opportunities for realization of this belief.

But after all, success in our profession is not measured solely by ability for research and the discovery of truth, any more than by the accident of popular approval that brings with it wealth and a prominent place in the limelight. There is the satisfaction of honest work quietly carried out, with the knowledge that duty, hard and unremunerative though it may be, has been done. The truest success in the art of healing does not, as it does in pure science, depend solely on intellectual pre-eminence; there are the properties of the heart as well as those of the brain, perhaps best expressed in the familiar text, "Though I have the gift of prophecy (prognosis), and understand all mysteries (diagnosis), and all knowledge; and though I have all faith, so that I could remove mountains (confidence and operative skill), and have not charity, I am nothing" (I Corinth. xiii, 2). In the keen pursuit of scientific diagnosis, which is a purely intellectual process without room for the emotions or sympathy, there is a risk that the patient may be regarded and treated as a machine out of order, and thus the plight and feelings of a suffering fellow creature may be forgotten. A doctor should add to the abilities of an engineer and chemical expert of the human body some of the attributes of the broad-minded churchman. Sympathy demands imagination, and both of these specially feminine properties should be preserved as valuable assets in our profession, and not transformed into callousness by contact with the naked and often repulsive aspects of a doctor's life. Imagination should supply an insight into the mind of the patient and an understanding of the fears and anxieties of those who come to be cured. Without this conception of the patient's point of view the student may think only of the diagnostic problem and forget the human aspects. The influence of cheerfulness and of reasonable optimism on the sick should be ever borne in mind; yet this may easily be forgotten in the presence of dour reserve even amounting to bad manners, really due to the patient's worries and self-consciousness. With a cheerful manner should be combined a degree of concentration sufficient to convince the patient that his condition is receiving serious attention; it is hardly necessary to carry this so far as to give the impression to every patient that he is the only person who counts in this world. Tact and self-oblivion, essentially feminine properties, are of great value in medical practice, and should therefore be preserved by medical women and not, as perhaps is sometimes the case, repressed or discarded by the more vigorously minded. As scope for the emotions and human interest are important factors in rendering work congenial to women, this would appear to be an additional reason why most women are more suited for practice than for pure laboratory research.

A good memory and methodical habits are important traits in attaining success. No doubt some effort is

necessary to acquire the habit of noting down on the spot, or at least on the same day, the details of a case; yet this occupies little time, and this supplement to memory, or to adopt Addington Symonds's phrase this "mechanical memory," may in future emergencies—for example, legal proceedings, or certificates—be of the greatest use. In addition to writing a little every day some time should be given each day to reading, both of a professional and of a general kind, so as to keep up to date and maintain the general culture so essential to the medical practitioner, whose motto should be "Nihil humanum a me alienum puto." As an element in success accuracy and punctuality should not be overlooked; a present doyen of the profession when a young man on arriving at one of his first consultations was met by a senior surgical colleague standing watch in hand on the doorstep and the remark that a habit of being five minutes late boded badly for future success; this hint, gentle or otherwise, had a lasting effect and the resulting meticulous punctuality no doubt played some part in his triumphal career. A more difficult factor in avoiding failure is to be prepared for whatever emergencies or calls may occur in practice; this demands thoughtful foresight and some imagination. The whims of chance of course influence the future in ways that to some onlookers may seem even unfair, but probably many of the "lucky ones" are so in virtue of their ability to turn opportunities as they arise into solid advantages.

Though this address is headed "The Problem of Success for Medical Women," at this comparatively early stage of women's activity in the medical profession it is not wise, and indeed is hardly possible, to say the last word on this subject. That medical women have succeeded in the face of great difficulties is shown by recent history, and now that circumstances have been so vastly improved by the pioneers the road has been opened to their successors. The way, no doubt, is long and beset by difficulties; patience, perseverance, and wisdom are necessary though exacting requisites, but there is encouraging evidence that by these means women may look forward to a just meed of success.

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THE REGULATING AND REFLEX PROCESS.*

BY

P. T. HERRING, M.D.,

PROFESSOR OF PHYSIOLOGY, ST. ANDREWS UNIVERSITY, AND PHYSIOLOGIST TO THE ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH.

PART I.—THE ANATOMICAL AND PHYSIOLOGICAL UNITS.

THAT the early symptoms of disease manifest themselves by alterations in the normal reflexes of the body is a postulate laid down by Sir James Mackenzie. The truth or otherwise of this hypothesis is being investigated at the St. Andrews Institute for Clinical Research, but before any steps can be taken in its application to the study of abnormal conditions it is essential that a clear understanding be arrived at of what the normal reflex really signifies, and of the general principles which govern its production. Probably no branch of physiology has made greater progress in recent years than that relating to the nervous system. Many problems still await solution, but general principles are emerging which are of far-reaching importance.

A brief review of the general principles underlying reflex action is essayed in these articles, and an attempt is made to extend their application to the study of abnormal conditions. The author is conscious that some of his interpretations of ascertained facts are open to criticism, and may be modified in the course of time. There can be no finality in a subject of this importance, but a statement of the general position as it seems at present to members of the St. Andrews Institute may be of value.

* The expense of this research was in part met by a contribution from the Medical Research Council.

THE ANATOMICAL UNIT.

The anatomical unit of the nervous system is the neurone, which is the nerve cell with its processes, dendrites, and axis cylinder. Chains of such units make up the nervous system. The neurones do not blend with one another anatomically at their junctions but are separated by a minute interspace in which there is a material endowed with distinct and highly important properties. This is the synapse or "synaptic membrane."

The Reflex.

It is improbable that any one anatomical unit in the nervous system can under normal conditions function by itself in the transmission of nerve impulses. For most purposes at least two neurones with an intervening synapse appear to be necessary to make up a functional unit. One of these neurones must be an afferent one whose province it is to transmit the nerve impulses excited in it by the stimulation of specialized end-organs or "receptors." The other neurone is an efferent one, and conducts the nerve impulses to some tissue or organ, which responds by whatever action characterizes it. Between the reacting organ or "effector" and the ending of the efferent neurone there is another minute interval occupied by a material somewhat similar in its properties to that of the synapse. Such an arrangement of anatomical units forms the basis of the simplest functional unit, which is the "reflex." An apparent exception to this statement is seen in the case of the so-called "axon reflex," where an afferent neurone sends branches to neighbouring arterioles and capillaries. But in the axon reflex the nerve impulses arise as usual at the receptors and pass to the central nervous system as well as to the blood vessels. The axon reflex appears to be a complete physiological unit in that a suitable stimulus applied to the skin produces a local vaso-dilatation of the blood vessels by the passage of nerve impulses over part of the afferent neurone only. But we do not know if this is the sole result of the stimulus, for the same neurone conducts the nerve impulses to the central nervous system, and sensation and reflex action may result in addition to the axon reflex. The axon reflex illustrates a principle of fundamental importance, because it shows that nerve impulses set up by a receptor in an afferent neurone may be productive of more than one kind of end-result. In general it may be said that the reflex is the physiological or functional unit, and that the reactions of the nervous system are built up of such units.

The modern view of the function of the neurone is that it conducts nerve impulses. It does so in response to stimulation, just as a muscle cell develops a state of tension in response to stimulation. But the nervous system is more than a highly elaborate conducting mechanism. The neurone conducts, but it manifests some degree of energy in doing so, though the amount of that energy is very small. There is no evidence that under normal conditions the nerve impulse dies down or undergoes a decrement in the neurone. The nerve impulse may be extinguished in the central nervous system, but such extinction always takes place at the junctions between the neurones—namely, in the synapses—and not in the neurone itself. On the other hand, nerve impulses set up in an afferent neurone may spread widely in the central nervous system, and the total sum of the resulting discharges by the efferent neurones may be greatly increased.

Rhythmical Activity of the Neurone.

Single, unrepeated nerve impulses do not, as such, find a passage through the central nervous system. In the quickest voluntary movement possible the muscular contraction is due to more than one nerve impulse, and there is evidence that the efferent neurones supplying voluntary muscle have a rhythm of discharge of about 50 per second. It is not known whether all neurones possess the property of rhythmical discharge, or what differences occur among them. It has been shown by Sherrington that if a stimulus applied to the afferent neurone in a reflex arc is sufficiently strong the efferent neurone has an after-discharge, and the muscle supplied by it remains in activity

after the stimulus has ceased for a period depending upon the intensity of the stimulus to the afferent neurone. The rhythm in the efferent neurone is initiated by nerve impulses from the afferent side, but persist for some time after the original stimulus has ceased.

The evidence, therefore, is in favour of rhythmical activity being a property of certain neurones—for example, efferent neurones. The possession of rhythmical activity by the neurone would be disastrous to the orderly working of the nervous system were it not for the property of inhibition by which the discharge of nerve impulses can be immediately checked when their continuance would interfere with other reactions. This property of inhibition appears to reside in the synapses, and can be brought into action in several ways.

We do not know if rhythmical activity is a property of the afferent neurones or of the receptors which initiate the nerve impulses in them. A certain amount of persistence of some sensory impressions does occur, but varies considerably in different sensations. In the sense of hearing the receptors in the cochlea are stimulated by mechanical means, the principle of sympathetic vibration being made use of. If the receptors respond to each individual vibration a series of impulses would be set up in the auditory nerve; but we do not know if this is the case. A damping mechanism is described, which would serve to cut short the response of the receptor. Mechanical vibrations can be distinguished by other parts of the body, and the impressions are discrete even with a high rate of frequency, a fact which militates against the possession of rhythmical activity by the afferent neurones concerned. In receptors which are excited by chemical means—for example, the senses of smell and possibly of vision—the sensation is more persistent. The persistence of sensation, however, may be due to other causes than a continued action of the receptors, and may be of central production. The amount of rhythmical action possessed by the different neurones of the nervous system is an important question, but it is difficult to see how it is to be determined, and for the present it lies in the realms of hypothesis only.

Automaticity of the Neurone.

It has long been debated whether nerve cells possess the property of automaticity. Some neurones certainly do not. It would be a catastrophe if the afferent neurones possessed the power of initiating nerve impulses on their own account; all kinds of sensory illusions would be of constant occurrence. Sensory phenomena are common in disease and may be ascribed to several causes. If due to the activity of afferent neurones some form of stimulation extraneous to the neurone is the exciting cause. Normally there is no evidence that the afferent neurones conduct any impulses other than those which have originated in the receptors at the periphery. Nor is it likely that efferent cells are endowed with automaticity, though attempts have been made to show that some of them do act in this manner. The efferent nerve cells supplying the muscles of respiration have an action that appears to be automatic, but it is impossible to cut off from them all afferent impulses. Further, the respiratory centre is a complex, and some part of it is susceptible to hydrogen-ion changes in the tissue fluid in its vicinity, but precise information is lacking as to where the action takes place. Haldane states that "to judge from analogy the sensitive elements are probably not the bodies of nerve cells, but end-organs or arborizations."

We have little evidence that chemical substances, except in gross amounts, act directly upon the neurone, whereas the synapse or junction between the neurones is particularly susceptible to even minute amounts of certain chemical agents. It is possible that the action takes place at the synapses in the respiratory centre, and that some of these are specially sensitive to changes in the hydrogen ion. Any other explanation would require the interposition, somewhere in the respiratory centre, of receptors specially endowed with the property of being affected by hydrogen-ion concentration and able to convert this form of energy into nerve impulses. We have no histological evidence that any such receptors exist, but they cannot be excluded.

Unconditioned and Conditioned Reflexes.

There is good reason for denying the automaticity of nerve cells in that part of the central nervous system which Hughlings Jackson termed the "lower or first level." Hughlings Jackson defined this level as consisting of spinal cord, medulla, pons, and of the grey matter in the floor of the aqueduct of Sylvius. We know from the researches of Sherrington that this level, if cut off from the levels above, is capable of reflex action only. The reflexes it exhibits are in the decerebrate animal "unconditioned"; that is to say, they take place in a definite or predictable form which is dependent only upon the nature and site of the stimulus applied at the periphery.

The conditions which exist when the higher levels are not cut off are infinitely more complex. Then we have to deal not only with the reflex but with the various forms of sensation and with voluntary action. Many of the reflexes in the normal animal are transferred from the lower to the higher levels and become correspondingly more complicated. It is true not only of the reflexes of voluntary muscles but even of some of the visceral reflexes. The flow of saliva, when excited by the presence of suitable food in the mouth, is an "unconditioned" reflex. But Pavlov has shown that the reflex secretion of saliva may take place in response to many different forms of stimulus, even of a painful character, if these have been regularly associated with the presentation of food. Thus the ringing of a bell, or the electrical stimulation of a certain area of the skin, when regularly associated with the giving of food, become effective in themselves in provoking the reflex. This reflex Pavlov described as a "conditioned" one, and the afferent paths of the nerve impulses which produce it must lead through the higher centres of the cerebral cortex, where it is liable to various forms of inhibition and is therefore no longer "unconditioned." The complexity of the reactions which take place in the cerebral cortex is partly due to the enormous number of pathways existing there, so that it is impossible to predict the reactions which any afferent impulse may cause unless such afferent path has been "conditioned" and all other afferent impulses are for the time being rigidly excluded. But the complexity of the cerebral reactions is also due to the exercise of the property of inhibition, which is a striking characteristic of the cerebrum, and appears to take place at the synapses. The cerebral cortex can direct the afferent impulses into any of the efferent paths, but the choice of many of the latter must largely depend upon the connexions made by the pathways of the incoming nerve impulses.

Sensation.

Under normal conditions the nerve impulses which give rise to sensations have their origin outside the central nervous system, and are excited by the response of the sensory nerve endings or receptors to certain adequate forms of stimulation. The nerve impulses thus initiated are carried by afferent neurones to the grey matter of certain parts of the cerebral cortex or basal ganglia. Their further translation into consciousness is effected by some process the nature of which is unknown. The afferent impulses in their passage upwards may excite reflexes at various levels, and may or may not give rise to sensations. The production of sensation depends partly upon the anatomical pathways the nerve impulses take, but also upon the receptivity of that part of the brain which is concerned in translating them into terms of consciousness. The afferent paths utilized in the production of sensation are, in part at least, the same as those which are used in the afferent side of the conditioned reflex, and a sensation or a reflex, or both sensation and reflex, may result from the same afferent impulse. In states of excitement or mental stress a stimulus, which under ordinary conditions would give rise to sensation or even pain, may set into activity the reflex mechanism but may fail to excite sensation, probably because the higher pathways of the cortex are fully occupied and by a process of inhibition the afferent impulses are prevented from exciting consciousness.

THE PHYSIOLOGICAL UNIT.

It is not customary to regard the sensation as a reflex, but the pathways of the nerve impulses which give rise to

sensation are identical with those which are concerned on the afferent side with the production of Pavlov's "conditioned" reflex. The difference between the sensation and the reflex really lies in the nature of the process which produces the end-results. A sensation is a physiological or functional unit of the nervous system just as a reflex is, and if the part of the brain which is responsible for the processes underlying consciousness be regarded as an effector the sensation becomes a reflex. From the clinical standpoint the sensation is as important as the reflex, and the causes which produce disturbance in the one may produce disturbance in the other, and the manner of production of the disturbance is in large part the same in both. The term "reflex," though a very elastic one, has a definite meaning, and there are difficulties in classifying sensation under it. A new term for the physiological or functional unit of the nervous system which would embrace sensation, reflex, and voluntary movement might be better. It is this physiological or functional unit of the nervous system which is affected and gives rise to the early manifestations of ill health.

Voluntary Movement.

The cerebral cortex gives origin to the impulses which bring about the contraction of voluntary muscle. The dendrites and bodies of the neurones concerned, the cells of Betz, which constitute the first neurones of the efferent chain, lie in the precentral convolution of the frontal lobe. There is no reason to suppose that the cells of Betz are automatic; they must be set into activity by nerve impulses reaching them from some other neurone. In the production of voluntary movement the nerve impulses pass from the cortex by the first efferent neurone into the lower level of the central nervous system, where they then make use of the efferent pathways of the lower or spinal reflex mechanism. The cells of Betz may be looked upon as part of a long reflex arc the efferent part of which begins in the cerebral cortex and extends to the lower level of the central nervous system. The cells of Betz may be set into activity by nerve impulses which reach them through the long afferent paths involved in the production of sensations. This form of activity may become a reflex taking place through the cerebral cortex, and is comparable with Pavlov's "conditioned" reflex, though its end-result is seen in voluntary muscle. Many of the complex movements make use of these long pathways. Speech, reading aloud, writing to dictation, the playing of musical instruments, and skilled movements generally, afford examples of voluntary action which have many of the characteristics of reflexes. Initiated voluntarily by some unknown process involving cerebral activity they may lose their voluntary character, and when the pathways for the nerve impulses have been cultivated by use the process becomes a reflex one. Some of the responses may be continued by a short-circuiting as it were from the afferent to the efferent side at intermediate or lower levels. But in man the provision for even the simpler reflexes tends to be promoted to the higher levels. In injuries to the human spinal cord involving complete severance from the higher levels the part of the cord below the lesion fails at first to act as a reflex centre and only recovers as such when the direct pathways from the afferent to the efferent side in it have been re-educated.

Reciprocal Innervation.

The contraction of one muscle or of one group of muscles cannot take place without affecting the state of other muscles. When the muscles which produce flexion at a joint are contracted the muscles which oppose the movement, the extensors, are stretched. In a reflex or voluntary contraction of muscles, exciting a definite act such as flexion, provision is made in the central nervous system for a twofold action. The stimulus which excites the discharge of nerve impulses by the efferent neurones supplying the flexor muscles also inhibits the activity of the efferent neurones supplying the opposing extensor muscles. There is indeed an actual elongation of the opposing muscles due to their sudden loss of tone. A reflex or voluntary contraction of one group of muscles is not a complete manifestation of the end-results of the nervous process concerned, for the nervous system is so arranged that muscle has a reciprocal innervation. The phenomena of reciprocal innervation, the contraction of one group of muscles and the relaxation of another group, may be occasioned by nerve impulses coming from the higher levels as in voluntary movement, or by impulses entering the lower level of the central nervous system by afferent neurones from the periphery as in reflex movement.

Changes in the tension of each muscle excite receptors—the muscle spindles—in the muscle, and afferent nerve impulses are carried to the central nervous system, where they are co-ordinated and distributed to efferent neurones, stimulating some and inhibiting others, and thus leading to alterations in the tone of the muscles supplied.

The contraction of muscle alters the relative position of the parts of the body to one another. A constant stream of nerve impulses is carried into the central nervous system by afferent neurones from the proprioceptors, the receptors which are acted on by gravity and movement—for example, the utricle, saccule, and semicircular canals—and the receptors acted upon by tension—for example, the muscle spindles, and nerve endings in joints, ligaments, and other structures. Many of these impulses appear to be directed into the cerebellum, which Sherrington terms the head ganglion of the proprioceptive system. The impulses are co-ordinated in the cerebellum and distributed from it to efferent neurones in the lower level of the nervous system, and lead to alterations in the postural tone of the skeletal muscle.

The contraction of muscle, whether voluntary or reflex, is not an isolated act, but is accompanied by numerous complicated events in the central nervous system. The changes in muscle tone brought about by reflex action are of far-reaching importance, but are as yet imperfectly understood. Evidence is accumulating that the nervous processes concerned in the production of tone are in some respects different from those that have to do with ordinary contraction. The metabolism appears to be of a different character in the two events, and it is possible that the autonomic system plays a part in the maintenance of tone and of continued or tonic contraction of voluntary muscle, and that the actual contraction in the muscle is of a different nature.

Reciprocal innervation is not confined to voluntary muscle, but occurs in the innervation of all forms of muscle, and is shown by the heart and by the blood vessels. There is a close correlation of these organs by the nervous system. The contraction of voluntary muscle involves changes in the rate of the heart, the distribution of blood in the blood vessels, and alterations in metabolism. The liver liberates more glucose from its glycogen, and a number of changes take place in the chemistry of the body. The body is a unit and all parts work together. No change can occur in any of its parts without the production of some effect upon the others and upon the unit as a whole. If one examines the ascending columns of white matter in the lower level of the central nervous system one cannot but remark upon the great preponderance of neurones which are not associated with sensation, and which must be concerned in the production of reflexes. The central nervous system must be in constant receipt of afferent nerve impulses from all parts of the body, many of which have no direct representation in consciousness. Alterations in these impulses bring about changes in the body of a reflex nature. The altered reflex may in turn have a secondary effect upon consciousness. Reflexes involving alterations in metabolism, in the rate of the heart, in the distribution of the blood, and in respiration, to mention only the more obvious reflexes, may excite changes in consciousness which give knowledge to the individual that all is not well, though the nature of the sensation is vague and its actual cause is not recognized.

Health and Ill Health.

In the St. Andrews Institute we assume that health consists in the harmonious working together of all the organs and tissues of the body. The process by which this is effected is a nervous one of great complexity. A state of health implies that all parts of the body are furnishing from the various receptors their normal quota of afferent

nerve impulses to the central nervous system. These in turn give rise to normal responses which are sensations and reflexes. The basis of the process is the physiological or functional unit of the nervous system.

Ill health, on the other hand, reveals itself by some disturbance of this process, and we are seeking to recognize the significance of these disturbances. Ill health is not necessarily associated with any visible pathological change in the organs of the body. When the nervous processes are disturbed the fact is usually recognized by the patient before any change in the organs can be demonstrated by the pathologist. Alterations in sensation occur which the patient recognizes as abnormal, and such alterations may be the first indication of the departure from normal health. Concurrently there may be reflex phenomena which show themselves as definite symptoms though they may be difficult to recognize. Any part of the reflex arc, or of the anatomical basis of the physiological unit, may be the site of the disturbance, though some parts of it are more susceptible than others.

Our contention is that we must look for the first signs of ill health in the nervous regulating processes of the body. They are the basis of the vital activities and maintain the life of the organism as a unit. Disturbance of the vital processes is the first sign of ill health, and their failure is the ultimate cause of death.

SOME CAUSES OF INTESTINAL OBSTRUCTION.*

BY

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I.—Volvulus of the Small Intestine.

Volvulus of the small intestine is a very rare condition, and the whole of the jejunum and ileum may be involved, or only one loop may be affected. Tully Vaughan, as quoted in Rowlands and Turner's *Operations of Surgery*, has collected 21 cases. In several of these the difficulties were so great, and the appearances so puzzling, that the operators did not recognize the condition during operation. The following is a case of volvulus of the small intestine:

A man, aged 23, was admitted to a nursing home in November, 1920, about midnight, after a journey of about forty miles by road in an open touring car. Forty-eight hours previously he had been seized with violent pain in the abdomen, round the umbilicus, accompanied by vomiting. The pain never entirely subsided, but he had violent attacks at intervals. He had vomited everything, and had passed no flatus. On admission he was in a very weak condition—temperature 97°, pulse 120. During the examination of the abdomen peristalsis was excited, and a coil of bowel could be felt below and to the right of the umbilicus.

The abdomen was opened through the right rectus, and there was a considerable escape of sanguineous fluid. Bands and adhesions were present in puzzling perplexity. Coils of small intestine were adherent to the lateral and anterior abdominal walls and to the caecum, obscuring this structure, and to each other. During the separation of these bands and adhesions, what was momentarily thought to be another stout and strong band was revealed, which, from its size (rather larger than a lead pencil) and appearance, and pathological associations, almost invited resection. On tracing this towards the caecum it terminated abruptly one inch from the ileo-caecal junction, at the point where a string band had bound the intestine to the abdominal wall. It passed downwards and inwards for four or five inches, terminating in slightly distended intestine, and it was now obviously a volvulus of the ileum. This was easily unfolded, and there were about three turns. The intestine rapidly regained its colour and peristaltic movement. The raw surfaces were sutured, or covered with omental grafts. The patient made an uninterrupted recovery.

The patient was a strong, athletic man, who had had an attack of appendicitis seven years previously, when he was ill for six or sutured or covered with omental grafts. The patient made an quite well in the interval.

The case was of interest because of its rarity and its primary cause, and also of the long interval between the cause and effect. It is condemnatory of the expectant treatment of appendicitis, and it reminds one that after such an attack there may lurk in the abdomen unsuspected forces that, given favourable conditions, even after the lapse of many years, are potential of swift calamity. A perhaps simple appendectomy is replaced by a difficult and dangerous operation.

II.—Duodenal Hernia.

There are two varieties of duodenal hernia—right and left—the left being the more common. The left hernia originates in the paraduodenal fossa of Landzert. Trietz states that three conditions are necessary for the formation of a left duodenal hernia:

1. The existence of a fossa and its boundary folds.
2. The presence of the inferior mesenteric vein in the fold.
3. Sufficient mobility of the small intestine to permit its entry into the sac. The mouth of the sac may be two or three inches wide. The size of the hernia varies from that of a walnut to the size of a man's head, and may contain all the small intestines. The length of intestine may be as small as two inches.

Left duodenal hernia occupies at first the left and upper portion of the abdomen, but eventually may occupy nearly the entire cavity. In 1899 Moynihan collected 57 cases of left duodenal hernia. Diagnosis is rarely made, and the condition is discovered at operation for acute intestinal obstruction or at autopsy.

The following is a case of left duodenal hernia in a woman:

History.—The patient was healthy as a child. Her first illness was acute rheumatism at the age of 21. She was ill for three months, but eventually made a good recovery. Since that attack, until June, 1920, she enjoyed very good health, but was inclined to be constipated at times. She was not in the habit of taking aperients. In June, 1920, she had a slight accident, falling backwards over the foot of a bed, and she had had soreness and stiffness in her back since. Immediately after each meal, and without fail, she experienced a dull pain in the epigastric region, radiating to the pubic region. The pain lasted about fifteen minutes, disappearing entirely. Coincident with the pain was distension of the abdomen, the latter disappearing at the same time as the former. Since the accident she had been more constipated, and had been compelled to take aperients on alternate days, but she never vomited. This condition persisted until November 8th, 1920, when she became acutely ill. On that date the usual pain appeared after dinner, passing away in the usual time. About three-quarters of an hour afterwards she was seized with violent pain in the epigastrium, causing her to sink to the floor and roll about in agony. She had no vomiting on that occasion. The pain persisted for about two and a half hours, gradually disappearing. She slept well the following night. On November 9th, 10th, and 11th, and until midday of the 12th she was able to get about as usual, though she had slight continuous nausea, but no vomiting. Her diet was restricted to milk, and she noticed slight abdominal distension. The only actions of the bowels during this period were several watery motions on November 9th, after taking castor oil. On the 12th another acute attack set in about noon. This time the pain persisted, abdominal distension became very marked, she vomited very persistently, and no flatus was passed.

Condition on Admission.—She was admitted to hospital the same evening about 10.30. Abdominal distension was marked. The abdomen was tender, and the pain very severe. The pulse was imperceptible at the wrist, and collapse was intense. Vomiting had ceased. Immediate operation was decided upon, and under the anaesthetic palpation revealed a large abdominal tumour, resembling an ovarian cyst, though obviously not of pelvic origin. It was slightly movable, but not on respiration, and resonant on percussion. The lower border was on a level with the interspinous line. My house-surgeon remarked that the outline of the abdomen was that of an advanced pregnancy.

Operation.—The abdomen was opened in the middle line, and there was revealed a large, smooth, glistening tumour. No intestine presented itself, nor did any sanguineous fluid escape at this stage. The hand was passed round the tumour, beginning on the right side. On reaching the lower border, and on a level with the third lumbar vertebra, an orifice was discovered admitting easily a thumb and two fingers. Between the orifice and the caecum were a few inches of collapsed ileum, with haemorrhages in its wall and mesentery. There was no entering loop of intestine, only the retiring segment. With the gentlest traction the intestine was drawn from the sac. About mid-jejunum there was a well marked constriction ring, and for many inches on either side of this the intestine was black but viable. Blood-stained fluid escaped from the sac along with the intestine. No attempt to stitch the orifice was made owing to the condition of the patient. Though desperately ill for a day or two the patient made a rapid recovery.

Operation was undertaken with the hope that some simple manipulation, rapidly executed, might still avert death that was imminent, and in this respect it was fortunate that the intestine was withdrawn without the

*A paper read before the Yorkshire Branch of the British Medical Association.

necessity of the division of the sac, as may occur in rare cases. The history of the case, the presence of a "palpable, definite, resonant mass, slightly movable, but not on respiration, and gurgling on auscultation," with retraction of the region corresponding to the colon, would permit a probable diagnosis to be made. No coils of intestine were visible.

As pointed out by Moynihan and Dobson, the plica venosa forms the upper anterior and lower boundaries of the orifice of the sac. This fold contains the inferior mesenteric vein, but in this case there was no obvious implication of the haemorrhoidal veins, nor was any collateral circulation developed in the abdominal wall.

It will be noted that the patient ascribed her condition to an accident. According to Treitz, duodenal herniae are always acquired, being caused by a violent effort, such as a blow, shock, or concussion. Landzert, on the other hand, states that these herniae are always congenital. Moynihan and Dobson state that all the essentials for the development of hernia are present in intrauterine life, and that the hernia is chronic, whether congenital or acquired, the strangulation alone being acute. Cases have been recorded as early as the ages of 14 days and 3 months.

No attempt was made to suture the hernial opening owing to the condition of the patient. This procedure involves two risks: one is that of injury to the mesenteric vessel, and the other the formation of a large peritoneal cyst.

III.—Intestinal Obstruction from Gall Stones.

In the following case delay in operation was due to the difficulty of diagnosis, or rather perhaps to the failure to recognize the condition. The onset was one of overwhelming violence. The patient was extremely obese. There was also a curious intermission in the symptoms, in which pain and vomiting ceased and flatus was passed. The latter was probably due to reversed peristalsis, making the calculus slip backwards, and thus removing the obstruction.

Gall stones most frequently cause obstruction by impaction, but they may also cause obstruction indirectly by producing volvulus, and by their pressure they may cause ulceration of the gut and subsequent stricture. Obstruction from gall stones may occur anywhere from the pylorus to the anus.

Mrs. M., aged 55, admitted August, 1921. Two or three days before admission she had an attack of violent abdominal pain, accompanied by vomiting and the cessation of the passage of flatus. On admission the vomiting had ceased and flatus was being passed, and this caused further delay in operating. The symptoms of obstruction recurred, and operation was performed. The gall bladder was thickened and shrunken, and a gall stone the size of a large walnut was found impacted in the lower ileum. This was removed, and distended coils of intestine were emptied at the poisonous proteose level of Wilkie. The patient did not recover.

IV.—Intestinal Obstruction from Uterine Fibroid.

An unusual cause of acute intestinal obstruction is a fibroid tumour of the uterus. According to Bland-Sutton, uterine fibroids may obstruct the intestine in three ways:

1. A pedunculated subserous fibroid may entangle a loop of small intestine and lead to fatal obstruction.
2. A very large fibroid may rest on the brim of the pelvis, thus obstructing the sigmoid flexure.
3. An impacted tumour may press upon the rectum, and lead to obstinate constipation and chronic obstruction.

The following is an example of the second variety:

Miss B., aged 50, admitted to hospital May 10th, 1921. The day before admission severe pain set in in the abdomen. Vomiting was persistent and continuous. On admission a huge myoma occupied the pelvis and well filled the abdominal cavity. Operation was at once performed. No bands or adhesions were present. Access to the broad ligaments was very difficult. The bladder, therefore, was detached from the anterior wall of the uterus, and the cervix was divided by passing a scalpel from the anterior to the posterior surface in the middle line, and cutting outwards toward the uterine arteries. It was not very difficult then to divide the broad ligaments from below upwards, thus rapidly removing the uterus with its appendages. Recovery was rapid and complete.

V.—Intestinal Obstruction from Herniae.

Cases of intestinal obstruction from inguinal or femoral herniae, if the patient is feeble or *in extremis*, may be treated as follows:

Using Gray's syringe, infiltrate the skin and subjacent tissues with novocain 1/2 per cent. Incise the skin, open the sac; if the bowel is gangrenous incise it also, but if in good condition dilate the constricting structure with the index finger, and return the hernia or not, as seems advisable. Incision from within is unnecessary in dealing with the constricting ring in any strangulated hernia. Digital stretching is sufficient and safer.

The stethoscope is of much value in the diagnosis of various abdominal conditions, and in intestinal obstruction it is not difficult to recognize the passage of intestinal contents through wide or narrowed parts of the bowel.

The chief points in the diagnosis of acute intestinal obstruction are: (1) continuous and persistent vomiting; (2) no passage of flatus in twenty-four hours, notwithstanding appropriate treatment; (3) increasing abdominal distension. We must not wait for the onset of so-called faecal vomiting. It is a sure sign of intestinal obstruction, but it is also a clear indication that death is imminent.

A CASE OF ANGIOCHORIOMA.

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Placental tumours of the angiochoriomatous type are so rare that the following case, which occurred in the district practice of the City of London Maternity Hospital early this year, appears of sufficient interest to merit report.

The tumour which we now know as an angiochorioma was first described by Virchow as "myxoma fibrosus placentae," and since his publication only a few score cases have been recorded, the majority of these being from maternity hospitals where careful note is being kept of any abnormality. It may, therefore, be a somewhat commoner condition than the records would indicate.

These tumours arise from the chorion, probably very early in pregnancy, and their localized condition has been held to mitigate the possibility of a maternal cause. Some writers have, however, suggested an inflammatory origin and syphilis has been incriminated as an etiological factor, without much weight of supporting evidence. An interesting explanation of their causation was offered in a paper read before the Annual Meeting of the British Medical Association in 1912, by R. W. Johnstone,[1] who suggested that obstruction to venous return from an area of the placenta might bring about the angiomatous condition.

Apart from the area invaded by the tumour, the placenta is usually quite healthy and functions normally. Hydramnios may coexist and the foetal mortality does not exceed 0.30 per cent.

Clinical History.

The patient was a multipara, aged 42. The pregnancy was normal except for an unusual degree of pallor, and during the pregnancy a painful "thickening" behind the left knee was noticed. She was delivered of a healthy full-term child. During the third stage of labour there was a free loss of blood, but insufficient to be termed a post-partum haemorrhage. Examination of the placenta showed the presence of a tumour. Five days after labour phlebitis and thrombosis of the left popliteal vein occurred: the temperature was 101° F. and the patient complained of a persistent right hemicranial headache. The uterus was well involuted. The heart was slightly dilated and haemic murmurs were noted. The blood pressure was 98 mm. No albumin was present. A blood count gave the following result: red cells 3,100,000 per c.mm.; haemoglobin 42 per cent.; leucocytes 13,100 per c.mm.; differential count: polymorphs 81 per cent., lymphocytes 15 per cent., large mononuclears 4 per cent.

[1] British Medical Journal, 1912, ii, 1113.

Three days later vomiting occurred and persisted for twenty-four hours. The lochia were offensive, although there was no uterine tenderness. Coliform bacilli and streptococci were isolated from a vaginal swab and a vaccine was prepared. A low pressure antiseptic vaginal douche was given daily. Ergotin was given hypodermically and iron and arsenic were administered by the mouth; six days later the patient was much improved and the thrombosis was resolving. She was discharged from hospital twenty-five days after parturition.

This was the patient's ninth pregnancy. During the previous pregnancy an unusual degree of pallor had also been noted and parturition was followed by a fairly large loss of blood and slight sepsis during the puerperium. There is therefore evidence of a pre-existing uterine infection. No evidence of syphilis was noted.

The Placenta.

The placenta measured 21 cm. by 17½ cm. and was of the battledore variety. On the foetal surface a tumour 9½ cm. by 8 cm. was present which projected some 4 cm. from the surface of the placenta. It was roughly reniform in shape and a few vessels could be traced from the insertion of the cord to ramify in its substance. The membranes extended evenly over the surface of the tumour except at one pole where there was slight distension by blood clot.

On section the placenta was yellowish-pink in colour, had a rather myxomatous appearance, and appeared homogeneous in structure. Blood vessels were fairly numerous. The maternal surface showed a smooth area about 13 cm. by 9 cm. subjacent to the tumour, over which the cotyledons were compressed and flattened. The remainder of the placenta appeared normal except that the sulci were unusually well marked, and the cotyledons much separated. Here and there between the cotyledons were small collections of blood clot, but no distinct "ponds" suggestive of ante-partum haemorrhage.

Histological Examination.

The histological structure of the tumour varied considerably in different areas. Some showed numerous and massed capillaries, with walls of a single layer of endothelium, embedded in a rather myxomatous-looking stroma. A few arterioles and venules were present. Other areas were predominantly cellular with few capillaries. The cells present were mainly young connective tissue cells, but a few scattered eosinophils were also seen. One or two nucleated red cells were noted in the capillaries.

The only factor which may be of etiological importance in this case is the evidence of pre-existing uterine infection.

We are indebted to Mr. Comyns Berkeley, Obstetric Surgeon to the City of London Maternity Hospital, for permission to publish this case.

HAEMOPHILIA IN THE FEMALE.

BY

MILDRED WARDE, M.B., F.R.C.S.

THE following case is of interest on account of the rarity of haemophilia in the female. The patient, a woman aged 47, was admitted to the Cancer Hospital with carcinoma of the breast, and stated that she was a "bleeder." The family tree is shown in the accompanying chart and the following details have been ascertained.

According to family tradition the disease is traceable through the paternal grandmother from her father to her son, the patient's father. The latter exhibited a great tendency to bruising and had epistaxis about every two weeks. Trivial injuries frequently caused swelling of the joints, one or other of which was almost constantly affected. Death is thought to have been due to haemorrhage connected with fracture of the leg, which occurred shortly before, "fragments of bone working out with much bleeding."

The patient's five brothers were all normal and their children are believed to have been unaffected. Of the five sisters of the patient three were normal; one died, with a son aged four months, from "blood poisoning"; and in one the history as to haemophilia is wanting.

With regard to the sisters' children, the eldest sister (Mrs. G.) had seven daughters, all of them normal, and seven sons, three of whom were alive and healthy, while four were supposed haemophilics. Of these four, one (F. G.) spent most of his life in hospital with bruises, epistaxis, joint affections, etc., and died in 1905 in the Fleming Memorial Hospital, Newcastle; the second died at the age of 2 years from "bleeding," the source of which is not known; the third, said to have been a "bleeder," died in France from haemorrhage after a wound; the fourth (A. G.) was recently in the Royal Victoria Infirmary, Newcastle, with a haematoma of the size of an orange under the scalp, the result of a kick. The tumour still fluctuated and coagulation seemed absent although the injury had been inflicted a month previously. There was also a history of frequent treatment for bruises, bleeding from the gums, swollen joints, and "lumps appearing after the slightest knocks."

The second sister (Mrs. T.—interviewed) had four daughters, all of them normal, and four sons, "bleeders." Of these four, one (G. T., aged 35—interviewed) is rarely free from swelling of some joint, most frequently the knee, and suffers readily from bruises, which sometimes bleed for hours, and from epistaxis and rectal haemorrhage (bright blood). In the London Hospital in 1920 he bled for a fortnight from a deep cut in the thumb, for which horse serum was given by the mouth and locally. In St. James's Infirmary, Wandsworth, in 1922 he was seriously ill after the extraction of two neighbouring teeth, and plugging had always been necessary after tooth extraction. The second son (P. T.) had attended the Yarmouth Hospital most of his life for joint affections, epistaxis, etc., and at the age of eighteen months had nearly bled to death from a slight cut on the chin. He died in the Yarmouth Hospital in 1912 at the age of 11 years, from haemorrhage from a cut of the finger, due to a fall on the beach. The third son died at the age of 4 years. He had tripped on the stairs, without sustaining any serious injury, and the next day vomited blood and died within twenty-four hours. The fourth son died at the age of four months from some unknown cause. At birth there had been troublesome haemorrhage from the umbilical cord.

The third sister had one daughter, normal, and a son who died at the same time as the mother (blood poisoning) at the age of four months.

The fourth sister had one daughter, normal.

The youngest sister had one son and one daughter, both normal.

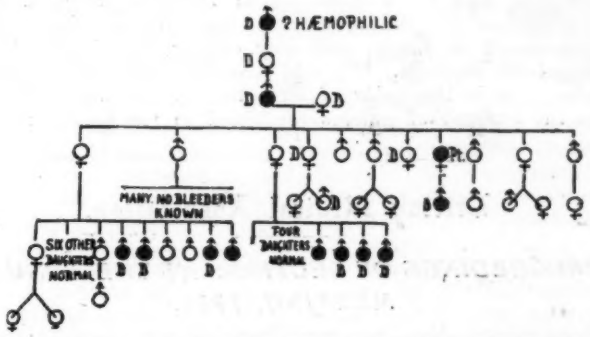

Chart of family of F. C. (1) D=known to have died. (2) The order of the children in generation below that of patient is not known.

The patient's history is as follows: At the age of 10 years she was found unconscious from bleeding following tooth extraction performed a few hours previously; she remained in the Yarmouth Hospital about three weeks. On a subsequent occasion she suffered from severe haemorrhage from a cut of the thumb, for which she was treated in the Middlesex Hospital. At the age of 21 an abscess in the labio-gingival fold was opened; severe haemorrhage followed in spite of plugging and she was in bed for two weeks. She always had a great tendency to bruising, but only after definite injury. At the birth of her son (F. C.) she suffered from post-partum haemorrhage. The son died at the age of 5 years in St. Mary's Hospital, Paddington, the following being the notes of the case: "May 22nd, 1910: Onset of bleeding from rectum 7 p.m., continued all night. May 23rd: Admitted, blanched and collapsed. Died thirty hours after onset. No necropsy allowed." In view of the certain diagnosis of carcinoma of the breast, it was decided, after discussion with the patient, to take the risk of an operation, as the patient's general condition was satisfactory and the blood count showed only a mild secondary anaemia. The coagulation time was between 3 and 3.35 minutes at 37° C. By way of pre-operative treatment 30 grains of calcium lactate were given by the mouth every other night, and artificial anaphylaxis induced by a subcutaneous dose of 5 c.cm. of horse serum, followed thirteen days later by 1/2 c.cm. There was some urticaria around the site of the original injection, with headache and malaise. The coagulation time after this was between 1.40 and 2 minutes at 37° C. At the operation bleeding was free but not excessive, and the wound was swabbed with horse serum before closing. There was little shock after the operation. Blood-stained serum oozed freely from the stab wound from the tube for three weeks, and slightly for nearly three weeks longer. Healing was slow, but otherwise convalescence was uneventful.

In an extensive and interesting monograph on haemophilia Bullock and Fildes (Eugenics Laboratory Memoirs, No. XII, 1911) describe three types of haemophilia as

occurring in women: (1) well marked haemophilia resembling that in the male, (2) haemorrhagic diathesis in females not connected with haemophilic families, and (3) "an abnormal tendency to bleed in female members of admitted haemophilic families, such tendency being slight or atypical as compared with well marked haemophila." The patient appears to belong to this last class.

I wish to thank Mr. R. H. Jocelyn Swan for his permission to publish this case; and Dr. Meadows of Yarmouth and the Registrars of St. Mary's Hospital, Paddington, the Victoria Infirmary, Newcastle, and the Yarmouth Hospital, for their kindness in supplying particulars of the cases under their care.

INSULIN TREATMENT: A SUGGESTION FOR AN OPTICAL METHOD.

BY

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THE insulin treatment of diabetes requires an accurate estimation of the glucose in the blood, and an easy method by which this could be accomplished would be welcomed by general practitioners.

I have made determinations of the amount of glucose in solution by measuring the index of refraction of the solution. The instrument I have used is described in Schuster and Lee's *Exercises in Practical Physics*, and depends on the measurement of the critical angle. The instrument is simple, and only one or two drops of the liquid are required. It would have to be assumed that any alteration in the index of refraction of the blood was due to the amount of glucose contained in the blood, and in a diabetic patient I think that this assumption is warranted.

Starting with a 10 per cent. solution of glucose the index of refraction was measured, and weaker solutions were taken with the following results:

	Index of Refraction.
10 per cent. glucose	1.341
5 " "	1.338
2½ " "	1.336
1¼ " "	1.334

At about 1 per cent., therefore, the solution could not be distinguished from water, which has an index of refraction of 1.333. The instrument, however, might be improved to give more accurate readings, and if this can be accomplished a quick and ready method of estimating the glucose is quite possible.

Another method which was attempted was a measurement of the rotation of the plane of polarization, but the same difficulty was experienced—the method was not accurate for very small percentages.

Some years ago I made experiments on the index of refraction of the fluids of the human body with a view to distinguishing between inflammatory and serous effusions. The following table embodies my results:

	Index of Refraction.
Pleural effusion	1.343
" "	1.347
" "	1.346
Ascitic fluid	1.336
Fluid from oedema	1.336
Cerebro-spinal fluid	1.339

I am of opinion that an optical method for determining the amount of glucose present in fluids can be elaborated which would give a more accurate result than the chemical method, would be more simple, and take much less time.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, 1923.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

VICTOR BONNEY, M.S., M.D., F.R.C.S., President.

DISCUSSION ON THE USE AND ABUSE OF OBSTETRIC FORCEPS.

OPENING PAPERS.

I.—COMYNS BERKELEY, M.A., M.D., M.CH.CANTAB., F.R.C.P.LOND.

EFFICIENT TEACHING.

I THINK it must be admitted that the very unsatisfactory position of the forceps operation to-day is due to inefficient teaching. It is not fair, as has often been done in the past, to shift all the blame on to the family doctor, and I feel that the teachers of obstetrics must shoulder their share of this responsibility, which, if anything, is greater than that of their pupils. That the teachers themselves are, however, not entirely at fault is obvious, for they have not the facilities to teach midwifery properly. In the end the responsibility for this inefficient teaching, in the past at any rate, must rest on the General Medical Council and the various examining bodies, who have it in their power to prescribe what rules and regulations they think fit.

The majority of students when they get into practice are not going to operate, and yet, before they can sit for their final examination, they have to spend three months in the out-patient and six months in the in-patient surgical departments of their hospital, working under the direct supervision of the chiefs of these departments. The majority of students, however, are going to practise midwifery, and yet many of the examining bodies do not compel them to attend any midwifery cases in a hospital, and there is no rule that any of the twenty women they must deliver shall be delivered under the immediate supervision of the chief of the department. Not many years ago the obstetric house-surgeon used to take the pupil to his first two cases only, and he had to look after the remaining eighteen as best he could. Until lately it could be said without exaggeration that most men went into practice without ever having seen a woman delivered as she should be—that is, in suitable surroundings.

The life or health of a patient may easily depend on the good or bad judgement of the medical attendant, and often does. In no instance, perhaps, is this fact more striking than in the practice of midwifery. It is recognized that the only way in which students can attain good judgement is by being given efficient teaching and ample opportunity in practical work, but whereas both efficient teaching and ample opportunity are always within the reach of every student when he is studying medicine and surgery, when he comes to study midwifery his opportunities for practical work under supervision are extremely limited. Although it is now the custom, at those hospitals which have maternity beds, for the midwifery pupils to take their first two cases under the supervision of the obstetric house-surgeon or sister midwife, I believe, up to the present, only a few of the examining bodies insist on this. Apart from unavoidable complications, a bad result in midwifery is too frequently the result of bad judgement. Moreover, the only way to obtain a real knowledge of the bad results of midwifery, and among other things of the abuse of the forceps, is to attend the practice of the gynaecological ward, and yet this is not compulsory. More recently in some hospitals, it is true, the deans have refused to "sign up" students unless, and until, they have been in-patient gynaecological dressers; but the General Medical Council did not insist on the students holding these posts, and the more cautious deans refused to adopt such an attitude. Most of the students, being aware of the fact that they only had to serve three months either in the in-patient or out-patient department, chose the latter because it gave them less trouble.

The bad results of midwifery are partly due to want of

thorough teaching. If a man has not been efficiently taught midwifery he will, certainly at the commencement of his professional life, often have difficulty in determining whether a particular case of labour he is attending is normal or otherwise. The experience he accumulates is only at the expense of his patients, and in many cases women pay most dearly for doing their duty to the community.

The whole difficulty in teaching obstetrics is that of obtaining sufficient material. There are far too few lying-in hospitals, and the few obstetric beds in general hospitals are often filled with difficult and abnormal cases. A medical practitioner can practically always get a bed for a medical or surgical emergency; can he for an obstetrical emergency? Certainly not, and yet the latter might easily be the more serious. In the medical and surgical wards one patient is available for the study of many students, but in the obstetrical wards one patient is only available for one student. A proper hospital obstetric service is an absolute essential to the efficient teaching of midwifery.

Ante-natal Treatment.

The true conduct of labour commences with ante-natal treatment. We shall all agree that although the forceps on occasions must be used and should be used, the less frequently this instrument is employed the better. The proper way, and one might almost say the only way, to accomplish such a reduction is by efficient ante-natal supervision. No doctor should agree to attend a woman in labour unless he is prepared to examine her on occasions between the time he books the case and the onset of labour, more especially in the last few weeks of pregnancy.

If medical students are not taught abdominal palpation on pregnant patients in the out-patient department and patients in labour in the obstetric ward, will the majority of them, when they go into practice, know how to do so properly, or how to obtain accurate information from such palpation, or will they even take the trouble to palpate? I think not. In the past they certainly had no such opportunities, and to-day these are very limited. Even now, it is not compulsory for a student to attend an ante-natal department, always supposing there is one. Many men do not mind admitting that they are not always sure whether the head of the child is engaged or not, and yet the head remains the best pelvimeter we have got. Moreover, the better one is at abdominal palpation the fewer vaginal examinations one has to make. I fear I am not exaggerating when I say that many women start labour without their doctor having any real idea of how it will progress, because of this lack of ante-natal supervision.

The forceps is used most frequently for inefficient pains and disproportion between the head and the pelvis. Proper ante-natal supervision, by getting the patient into as good a state of health as possible, can do many things to help the efficiency of the labour pains. Proper ante-natal examination will lead to the detection of gross disproportion between the head and the pelvis, of malpresentation, and of those cases of minor contraction in which the head of the child is not engaged when it should be—a knowledge of which may easily avoid the abuse of forceps.

The Operation.

And now let us consider for a few minutes extraction of the child by the obstetric forceps as a surgical operation, for a surgical procedure it is, and on occasions can be rightly termed a major operation. It differs from most other operations in that it is so frequently performed by men who do not otherwise operate. A man in general practice, unless he so desires, has very little need to perform the usual surgical operations, but many of the operations in midwifery he has to perform whether he likes it or not, whilst the public expects him to use the forceps as a matter of course, and this, as I have said, without proper training. The medical man may be called upon to perform a difficult forceps operation the first night he is in practice, and in most cases he has no assistant to help him with the the operation and no one but himself or the nurse to administer the chloroform; so that while as a fact his whole attention should be directed to the actual extraction, he has to occupy part of his time in administering the chloroform or seeing that the nurse is not giving too much or too little. In all surgical operations of a like severity the operator demands and expects proper assistance. In the usual surgical operations the patient is better off after the operation than before. With the forceps operation the reverse frequently obtains.

In most surgical procedures which can be dignified by the name of an operation the surgeon has ample time to make all arrangements for the safety of his patient, and, moreover, is in most cases well paid for his work. In the majority of the forceps operations, because of the absence of ante-natal supervision, or some other reason, arrangements are not made beforehand, and the doctor is certainly badly paid. As a fact the need for hurry really exists only in his own mind, and in most cases he has time to get assistance, but patients and midwives think that every doctor ought to be able to deliver a patient at once if he wants to do so.

In the practice of a family doctor there are probably more emergencies of an obstetric nature than any other, and there is scarcely any other operation in which more judgement is required, in which two lives are at stake, or in which the attendant has to make up his own mind without the help of a consultation. If a surgical operation of any severity is anticipated, the practitioner is able to call into consultation his old teacher, or some other expert in whom he has confidence and who is prepared and able to carry out efficiently any operation decided upon. In the majority of cases of obstetric emergencies he cannot do so—either he cannot get his patient into hospital, or the patient cannot afford expert advice. Moreover, he is supposed by his patient to do such things himself, and he will perhaps lose caste if he does not, while in many cases he has to act at once, as there is not time to obtain assistance even if such were available. As a matter of fact the forceps operation in unskilled hands is just as unjustifiable as any other operation in similar circumstances, and yet many doctors who would decline to perform operations of even a minor nature do not hesitate to use the forceps in difficult cases, or in many cases cannot help themselves.

Apart from the question of judgement, with strict attention to asepsis and antisepsis a doctor, by carefully reading up the anatomy and method of procedure, can perform most operations without, at any rate, a disastrous result, but not so in obstetric surgery. It is impossible to sterilize the vagina, while normally the interior of the uterus in pregnancy and labour is sterile. It is therefore impossible to pass anything into the uterus, be it the fingers, hand, or the forceps, without potentially infecting it; and moreover, from the darkness, warmth, and serum present therein, it rivals in its ability to encourage the growth of pathogenic organisms any suitably prepared culture tube in a bacteriological laboratory. Moreover, although the microbes in the vagina may cause no harm, when they are transplanted to a suitable soil in the uterus death may result.

If a non-operating practitioner contemplated performing a small operation and then found that a big one was necessary he would get help from an expert. The trouble is that, an ordinary pull with the forceps having failed, the doctor does not realize that he is up against something serious. He does not get help, but pulls all the harder.

Again, it is not unfair to say that many men take infinitely more trouble over the smallest so-called surgical operation than they do over the forceps operation. India-rubber gloves are worn, the area of operation, if covered with hair, is shaved, and it is prepared with some antiseptic, the parts concerned are surrounded with sterile towels, while the operator wears a sterilized overall, and the assistance of an anaesthetist is obtained. I agree that it may be impossible to obtain an anaesthetist, but there is no reason why rubber gloves should not be carried in every midwifery bag, and there is no difficulty in shaving the vulva or in applying an antiseptic. In the majority of cases are rubber gloves worn, or is the vulva shaved? I fear not; while the patient is delivered in a bed which perhaps sags in the middle, whereas she should be on a table, or at any rate on a bed which does not sag. The doctor may or may not have a sterilized overall, and the patient may or may not be suitably protected with sterile

towels—in most cases not. The doctor may very likely reply: This cannot be helped—the patient cannot afford such luxuries; but I am not dealing with the doctor's responsibilities, but with the abuse of the forceps extraction as an operation.

The position of a nation depends upon the number and efficiency of its population. In the absence of sufficient hospital accommodation for lying-in women the local authority should be responsible for supplying the proper aids to childbirth. In comparison with other operations the forceps extraction is at a further disadvantage, for whereas the surgeon in practically all cases is able to carry out the best treatment for the patient, the obstetrician may have no such choice, and he may not have had any opportunity of treating the patient until one procedure only is available, and that not the best.

With the ordinary operation the surgeon is not influenced by the patient or her relatives trying to persuade him to operate; on the contrary the strongest objections may be raised by one or the other. How different is the lot at times of the doctor attending a confinement—constantly being reminded that Mrs. So-and-so had instruments and the labour was terminated easily and quickly.

Mechanism of Labour.

The abuse of the forceps operation may be regarded from quite a different point of view from that which I have dealt with up to now. Normal labour consists of certain regular stages, and is a natural process, just as much as defaecation and micturition. At times complications may intervene in any of these physiological acts, so that they may become pathological; but it is in the case of labour only that such transmutation from the physiological to the pathological can be ascribed to the interference of the medical attendant. The mechanism of labour is arranged to get the best possible result in the shortest length of time. The child is not propelled downwards until the cervix is fully dilated, which dilatation Nature accomplishes gently, slowly, and evenly, the contractions of the upper segment pulling the cervix over the head. Then as the head is advancing through the pelvis from the brim to the outlet its smallest longitudinal diameter, by the movements of flexion, internal rotation, and extension, is accommodated to the largest diameter of the pelvis, so that the pressure on the maternal and foetal tissues is reduced to a minimum, the head being moulded very slowly. In addition, as the child passes through the vagina the levatores ani are alternately stretched and relieved from strain according to whether there is a "pain" or not.

The operation of the forceps extraction must always interfere with the normal mechanism, and in many cases does so very disastrously. If the forceps is applied before the cervix is fully dilated the dilatation is now more rapid, more forcible, and also uneven, while instead of the cervix being pulled up by Nature it is pulled down by the doctor, the total result being some injury to the mother, and often serious injury. Labour is more quickly terminated by the use of the forceps, otherwise the doctor would not be using this instrument. This means that with the forceps extraction insufficient time is allowed for the proper moulding of the head, and an unmoulded head is much more difficult to deliver because the diameter engaged is larger than it should be. Again, unless the greatest care is taken during extraction to pull only when a uterine contraction occurs, the levatores ani will be unduly stretched—they will not be given that period of rest which Nature demands. Lastly, the movements of flexion, internal rotation, and extension are interfered with, especially when axis-traction forceps are not used, the delivery by the ordinary forceps notably causing premature extension of the head.

My experience as an examiner to most of the examining bodies in England has taught me that less attention is paid by students to the mechanism of labour than to any other subject in midwifery. I cannot help thinking that the lack of interest in this subject remains with many of them for life, otherwise many emergencies, necessitating, as the practitioners think, the application of forceps, would, like the old soldier, "slowly fade away."

That forceps are often used unskilfully is due to the fact that, in the past at any rate, a large number of men have not seen them employed before going into practice. The method of using the forceps is open to abuse. The instrument can be used as a tractor, compressor, rotator, lever, and stimulator. In my opinion the only warrantable use to which the forceps should be put is that of traction. Certainly there are better and safer ways of stimulating uterine contraction. I presume none except the most ignorant would in these enlightened days think of using the forceps as a lever. All the cases which I have known in which such a use had been made of the instrument ended disastrously for the mother, either in fearful laceration or in her death. I know that many practitioners think that in cases of persistent occipito-posterior positions rotation with the forceps is a good method of treatment, and that it is often used as a first choice. In nearly every case, especially when the patient has been watched carefully in the early stages of labour, it is possible to rotate the head and shoulders with the hands. The child certainly is more likely to be injured by rotation with the forceps, and I have seen most serious laceration following such attempts on the mother. To use the forceps to make the diameter of the head smaller—that is, as a compressor—is absolutely wrong. This instrument must exert a certain amount of compression unfortunately, but this must be avoided as far as possible by allowing its handles to remain loose at frequent intervals. There remains traction, the one proper use to which this instrument can be put. Even this use, however, is frequently abused. The force used should be strictly limited. If great force has to be used—and not infrequently one meets doctors who state that they had to pull with all their strength, and perhaps with the aid of one foot against the bed—this is a sure indication that forceps extraction was not the correct treatment.

It is an abuse of the forceps to use it too soon or too late. The forceps should never be applied too soon—that is, before the cervix is fully dilated, either by Nature or, in cases of necessity, by hand, or, in cases of disproportion, before the head has had time to mould. To apply the instrument in exhaustion of the uterus, or after the death of the child, is to apply it too late.

It is wrong to deliver the child quickly unless such is absolutely indicated. A slow delivery is not nearly so likely to injure the mother or the child. It is not fair on the forceps to use it before emptying the bladder with a catheter, neither is it fair on the patient. A vesico-vaginal fistula may easily result in the absence of such precaution, and yet I have heard some of my friends say that they are so apt to forget this that they always keep a catheter tied to one blade of the forceps. Lastly, if difficulty is experienced in applying the forceps by one who is accustomed to use this instrument, this is generally an indication that the case is not one really suitable for forceps but would have been better treated by some other procedure.

Baudelocque remarked that the obstetric forceps was the most useful instrument that had ever been invented. I have been criticized for suggesting that this further supplication should be added to the Litany: "*From* the obstetric forceps, good Lord, deliver us." So frequently, however, is this instrument used that one might be justified in thinking that for generations there had been a supplication: "*With* the obstetric forceps, good Lord, deliver us."

The use of the forceps may be necessary in the interests of the mother or the child, but I take it that such action can only be justified if, in the first case, the mother is not worse off than before the forceps was used, and, in the second, if the child is born uninjured.

Advocates of the frequent use of the forceps maintain that the operation shortens the woman's suffering and diminishes her risk, and also that of her child. It is true that the suffering due to labour pain is shortened, but is this worth the increased risk, nay, the certainty in some cases, of lifelong suffering from injury or infection when it can be mitigated by far less dangerous remedies? Then many assert that they get no tears, or less severe tears, when using the forceps. I doubt it. They may not recognize the lacerations of the cervix, or of the vaginal walls, and at any rate it is quite certain that the

cardinal ligaments of the vagina—otherwise known as Mackenrodt's ligaments—are always stretched when the forceps is used and the head is high up, and often badly stretched, leading to prolapse later. It is quite certain that it is more difficult to maintain asepsis if the forceps is used.

Those who seek to justify the frequent use of the forceps insist that there are three essentials: the first that the instrument shall be applied perfectly; the second that a far longer time than is usually employed should be taken in effecting delivery; and the third that only the smallest amount of force should be used. Very wise; but in every hundred cases of forceps extraction, in how many cases would these three essentials be maintained? And then there is the reservation that the doctor should be able to recognize every time he uses the forceps whether the case is suitable for this operation or not—a consummation devoutly to be wished, but which, with the present system of education, is simply impossible to obtain.

I need not enter minutely into the foetal injuries which may result in childbirth, whether the forceps has to be used or not. Eardley Holland, in his investigations into the causes of death during delivery, observed that in 50 per cent. of the cases death was due to intracranial haemorrhage, and that in the majority of cases the forceps had been used. Moreover, some of the children who are not killed suffer from such incapacities as epilepsy, idiocy, imbecility, or paralysis, due to cortical injury. Of the children who die in the first year of their life 40 per cent. die in the first month, and although the mortality towards the end of the year has been improved by the institution of child welfare centres, that of the first month has never diminished.

It has been maintained that injuries to the mother or child are not due to the forceps but to ignorance in their use; still, they remain. It is true that spontaneous labour is responsible on occasions for injuries as bad as operative delivery, and it may be true that the majority of women who have borne children suffer sooner or later, and more or less, from some damage. The extent of the morbidity, however, in spontaneous delivery is nothing compared to that following operative delivery. If a baby has been born alive and healthy, this is no justification for the use of the forceps unless the mother also returns to her duties a useful member of the community. Those who are in charge of lying-in and gynaecological beds are constantly having brought to their notice the disastrous results of the unskilful use of the forceps—such as rupture of the uterus, rupture of the vagina, fistulae of the bladder and rectum, whilst fracture of the pelvis is not unknown. During the last year I know of two cases in which the blades of the forceps had been forced through the vaginal walls and applied outside the lower uterine segment, in the process of extraction the lower uterine segment being torn off from the rest of the uterus.

The forceps, when indicated, is a safe instrument if properly used; when not indicated it is difficult to mention a more dangerous one. I have seen it stated that on the whole midwives get better results than doctors. I should hope such a statement is not true; but if there is any truth in it the better results, I feel sure, are because they never use the forceps.

Indications.

I do not propose to discuss in detail the indications for the use of the obstetric forceps. Such information can readily be obtained by reference to any good textbook of midwifery. Rather I would deal with general principles, especially with reference to the most frequent indication for the use of forceps—namely, delayed labour.

Assistance with the forceps should be given only if such is really needed; and if, therefore, the practitioner is in any doubt about the necessity or otherwise of using this instrument he should decide not to use it, since spontaneous labour gives better results for the mother and for the child. The forceps should be used to anticipate danger to the mother or child, and not when one or other is already in danger.

The doctor must always remember that his hands are safer, and in most circumstances more useful instruments than the obstetric forceps. Thus palpation should decide whether it is possible or impossible to deliver a woman with the forceps, and if possible whether its use is wise or unwise. Those of us who have held hospital appointments can recall many cases in which a patient has been admitted for craniotomy after futile attempts at delivery with the forceps had been made, perhaps for two or three hours, with resulting lacerations and infection; or in which, although the patient had not been torn or her child killed, the chance of a successful Caesarean section had been diminished by an unwise attempt at delivery.

When there is any doubt there is no difficulty in placing the patient in the Walcher position and pressing down the head; if then it does not engage well in the brim the forceps should not be used. Again, a persistent occipito-posterior position of the vertex and mento-posterior position of the face can, in most cases, be remedied by the hands, as also can insufficient dilatation of the cervix and prolapse of the anterior lip.

In many cases of extraction by the forceps the operator has not visualized the exact condition of affairs, but having noticed that the descent of the head is slow or delayed, he hurries this up with the forceps.

Before using the obstetric forceps, therefore, the practitioner should ascertain the relative sizes of the pelvis and head, the condition of the genital canal, the strength of the uterine contractions, and the state of the child. The forceps operation should always be regarded as an "emergency" operation, and if such a proposition was universally accepted the occasions upon which it would be found really necessary to perform it would be strikingly few compared with the present-day practice. It is no credit to a man to be known as "very good with the forceps." To be a good midwifery practitioner one must be an able diagnostician, and have good judgement and much patience, and with these three attributes the apparent necessity for instrumental delivery becomes less and less. In most cases it is safer to wait than to act, and only on very rare occasions does Nature inflict such injury on the mother and child as the forceps.

Unless there is any obvious contraindication, no primigravida should be delivered with the forceps until she has undergone the "test of labour," since the normal mechanism of labour far surpasses any other method of delivery. There is no hard and fast general rule for the employment of the forceps; every case must be judged on its own merits, not a few of the failures being due to the judgement of the doctor being at fault.

Taking every case into consideration in which instrumental assistance appears desirable, there will be more danger in using the forceps than in dispensing with its aid. Injuries due to the use of the forceps are quite commonly spoken of as being unavoidable; in most cases this is not a fact; moreover, on many occasions tears are not efficiently sutured because the doctor hesitates to acknowledge that they are present.

Delayed Labour.

The decision that there is delay in the birth of the child depends a good deal on the idiosyncrasy of the particular practitioner present at the parturition. The commonest form of delay is that due to inefficient uterine contractions in the second stage of labour. The rule that if a primigravida has been in the second stage of labour for over two hours, or a multipara for over an hour, she should be delivered, is a most pernicious one, and is a strong factor in the abuse of the forceps. It owes its origin to the time when abdominal palpation and other aids to diagnosis were in their infancy, the attention of the attendant being fixed on the idea that if the second stage of labour lasted longer than this something was wrong. The doctor should always be guided by the condition of his patient and her child, and not on the number of hours he has to wait in attendance. There is no definite time limit as to when the forceps should be used; the vital question is—To what is the delay due? Is it due to inefficient pains, or malpresentation, a contracted pelvis, large head, or a rigid perineum, and so forth? A doctor should never use the forceps merely to suit his own convenience; such use, to say the least of it, is unscientific.

In the absence of a serious complication, such as haemorrhage, a lingering first stage never does any harm, and there is always time to remedy any displacement or to decide upon some method of treatment, if necessary, which will probably be less dangerous than that of the forceps operation. A lingering second stage, as long as the "pains" are not failing or becoming continuous, is less harmful than a rapid delivery with the forceps. Patience first. It is true that delay in the birth of the child always causes anxiety in the patient or her relatives, and even perhaps suspicion, whereas a quick delivery is apt to bring credit to the practitioner—not by any means always where it is due. The proper time to use the forceps, when the delay is due to inefficient pains, is when they are becoming inefficient, not when they have become so; if pains have ceased, post-partum haemorrhage is lurking round the corner.

And lastly, with reference to the use and abuse of the forceps when the delay is due to disproportion. In no instance is an accurate diagnosis of more importance. The practitioner must not be unduly influenced by the external measurements of the pelvis, which indicate mostly the shape of the pelvis, neither should he regard the pelvis as normal if his finger will not reach the promontory of the sacrum. A knowledge of the length of the true conjugate is only of material use when it is so small that obviously a child could not pass the brim of the pelvis without mutilation, if at all, or when it is so large that there would be no difficulty in spontaneous delivery. The majority of cases of disproportion do not come into either of these categories, and it is in this class of case, in which the conjugate is between 3½ and 4 inches, that so much harm is done when using the obstetric forceps.

In this medium class of contraction the practitioner should not interfere unless he is forced to, and if, as I have suggested, he will always regard extraction with the forceps as an "emergency operation" he will be far less tempted. He should be guided by the condition of the mother and child, and if this remains satisfactory he should hold his hand. It is far better that the second stage of labour should last six hours than that the mother and child should be injured or killed.

Especially should what is known as the high forceps operation be avoided, for it is an extremely dangerous one and often most difficult. Munro Kerr has reported that since its abolition in the institutions with which he is connected, spontaneous delivery has become much more common. Such an operation should never be an operation of choice.

The higher the head is in the pelvis the longer should the operator wait before applying the forceps; inefficient pains are an extremely rare cause of the head being arrested high up. In many cases of delay due to disproportion labour terminates spontaneously and safely after a second stage of six or even more hours, though it would have ended disastrously had the forceps been used. Statistics show that 80 per cent. of border-line cases of disproportion will, if left to Nature, end in spontaneous labour. After all, the practitioner can always fall back on the forceps if Nature fails.

The use of the forceps in cases of medium disproportion is responsible, as Eardley Holland has shown, for a very large number of stillbirths, and this, especially now that the number of children born is very little higher than the number of people dying, is alarming.

To say that unfortunately the baby has died because its head was too large or the mother's pelvis was too small in most cases reflects more on the acumen of the practitioner than on the anatomy of the patient. The obstetric forceps should be used to deliver a live child; the delivery of a dead child does not warrant a testimonial for using it.

If the head of the child is movable above the brim of the pelvis the forceps should never be employed. If the head is fixed in the brim and does not, after a fair trial, undergo enough moulding to come through, the use of the forceps is really an abuse. If the head is moulding sufficiently to come through the brim, however slowly, leave it to Nature. To assist in such cases with the forceps will in most cases mean serious injury or death to the child, and not infrequently injury to the mother. If there is the least doubt about the head being able to pass the brim do not use the forceps, as this only increases the danger if Caesarean section is decided upon.

A generally contracted or funnel-shaped pelvis is commoner than is usually supposed. In any case, therefore, in which the head has difficulty in entering the brim the measurements of the outlet should be taken, and a very careful examination should be made of the nature of the presentation.

It has been said with some semblance of truth that gynaecologists would starve if it were not for bad midwifery. The forceps is an extremely valuable instrument when used with intelligence and in suitable cases; so is poison gas.

II.—JOHN FAIRBAIRN, M.B., F.R.C.P., F.R.C.S.,

Obstetric Surgeon, St. Thomas's Hospital.

I do not wish to add further counts to the serious indictment of the obstetric forceps in the opening paper or discuss indications or contraindications, but rather to try to put the forceps in its proper place in our defensive system against undue prolongation of labour. My purpose will be to show that unless instrumental delivery is clearly and universally recognized as our second and not our first line of defence, our plan of campaign is conceived on wrong lines. It is accepted as a general principle throughout the practice of medicine that the prevention of abnormal functioning must always be our first endeavour, and the application of this principle to midwifery practice means that the chief responsibility of the medical attendant is the elimination of the factors interfering with normal parturition—in other words, the first line of defence.

The obvious retort to this proposition is that it is purely academic—the first line of defence cannot hold because little is known and still less can be done to eliminate the inhibiting influences on labour, and therefore you will all continue to fall back on the forceps. The more of you that make that reply, the more will my position be strengthened. My point is that hitherto reliance has been placed almost entirely on the forceps, thus acting as a drag on progress towards our primary objective; until we try and discover what can be done, we will go on as we have in the past, but once we concentrate on holding the first line and making a stand there, then, in the event of failure, it is right to fall back on our second line.

In illustration of what has already been done by the application of a similar academic principle and of reformation along physiological lines, I will quote the analogous case of infant feeding. Formerly our attention was largely directed towards perfecting substitutes for the natural food of the baby, and great success was attained in adapting the milk of another mammal, so as to enable the human infant to thrive on food never intended for it. Our textbooks devoted no more than a line or two to breast-feeding. There was a pious statement that it was best for infant and mother; there was a list of its contraindications with instructions as to how to disperse the milk when suckling was not carried out, and that was about all; whereas the preparation of substitutes and the modification of cow's milk and other possibilities took up pages and sometimes a whole chapter. No attention was given to the causes of failure to suckle and how they might be removed, or to the means of increasing mammary activity when inefficient or to the investigation of the reasons why the baby did not thrive satisfactorily at the breast. Now much of the work of the School of Mothercraft, which I instance because I happen to know it, is the re-establishment of breast-feeding after needless weaning of the baby. At any time may be seen there living evidence of what ten years ago would have been thought impossible in the shape of mothers who have previously failed and failed repeatedly, and mothers whose infants have been weaned for six weeks or more, successfully nursing a contented baby. The error was that our energies had been devoted to providing a substitute for the function we did not attempt to control. We were clearly on wrong lines, for, however successful, such substitutes could never be as good as the real thing. We should rather have studied the function of lactation and how to improve it when defective—precisely what we are now learning to do.

Our attitude towards the management of labour has likewise been that of perfecting the substitute for the natural powers—the brawny biceps of the attendant exerted through the midwifery forceps—at which, as in the case of artificial feeding, we have obtained success, but also along the wrong lines. So long as our sole idea is that labour, if protracted, can always be terminated artificially, we are in the same position as those who at once resort to artificial feeding, if the baby is not progressing, instead of trying to discover and remove the causes of failure at the breast. That out-of-date method was clearly another example of relying solely on the second line of defence, and abuse of forceps will continue till a like change comes about in our attitude of mind towards midwifery.

Let us now see what changes the adoption of the principle that the maintenance of the physiological is to be our first objective in midwifery practice will make. In the first place, it involves a shifting of the centre of gravity of medical practice from mere attendance on labour, particularly its finishing stages, to the general supervision before, during, and after labour, but not necessarily involving the presence of the doctor at the birth. Much of this has already been accepted with the development of ante-natal supervision. Suppose as a result of that supervision the malpresentations, misfits between the head and the pelvis, and other foreseeable complications in labour have been excluded, we are left with by far the most frequent cases in which the forceps is used—those of sluggish uterine action with a delayed second stage.

Time will not allow of a discussion of what is, and may be, possible to diminish the need for the artificial termination of labour, and in 1921 I discussed this aspect of the interminable forceps problem and can refer you to it[1]; though the matter of that paper was excellent its title was so unattractive that I am sure none of you read it. I might, however, summarize a few points from it. The ante-natal supervision must include a study of the individual characteristics of each patient and an attempt to understand her temperament and her mental attitude to what is before her. It should also convey the assurance that she is a normal woman who will have a natural labour and should remove all suggestion of failure from her mind. The chances of success are much greater in institution management—an additional argument to that advanced by your President—because of its better provision for surgical technique. The atmosphere in a hospital or nursing home with its assurance of success is an important factor in labour, as in the case of breast-feeding. The securing of the right atmosphere is a much more difficult proposition in the patient's own home, with her playing the chief part as tragedy-queen and surrounded by worrying and fussing relatives. The avoidance of fatigue is another point, for the uterus of an exhausted woman will not function efficiently. Loss of sleep, lack of food, and, most of all, the fatigue that comes with long-continued pain, are among the common causes of exhaustion, producing restlessness and loss of self-control. To my mind a knowledge of how and when to give relief to the exhausted woman is a big factor in lessening a resort to forceps delivery.

In the conduct of the labour itself the object of the medical attendant should be as much as possible in the direction of supervision, and supervision that is kept in the background as much as possible. Satisfied that everything is normal, the actual labour can be left to a midwife on her mettle to make the obstetrician's methods a success, and the patient should be encouraged to deliver herself naturally. Care would be required to see that these methods were not carried to the extreme of refusing to recognize failure and to postpone forceps delivery to the detriment of mother and infant. The choice of a midwife is extremely important, and it is essential that she should be enthusiastic and show no lack of confidence or over-anxiety, which would be at once reflected in the patient. Another reason for the medical supervision being kept in the background is that the presence of a doctor with a bottle of chloroform and a bag of clinking instruments is often too strong a suggestion of a speedy end, without further effort to encourage natural delivery. It may be argued that toxic drugs used to "dope" a patient are less physiological than terminating the labour by forceps without drugs, but there is clearly a middle course. Treatment by sedatives is more rational, in that the difficulty with most of these patients is that they are over-sensitive and highly strung and fatigue easily, for which these drugs are the correct treatment.

Posture is another important point which has been neglected and doubtless increases the incidence of instrumental cases. The natural position is a squatting one, and I would like to hear if any of you have tried that posture in the hope of increasing the chances of natural expulsion. Then there is the question of pituitrin and other drugs to stimulate the uterus when there is a little further effort required to complete expulsion. I think, however, that I have probably said enough to give at any rate an indication of the attitude I consider necessary to limit the abuse of forceps. I recognize clearly that in the case of ordinary domiciliary practice it is much more difficult than in hospital; but I would urge that there is no reason why an attempt should not be made to diminish the excessive use of artificial means of delivery.

The patients have a big say in the matter; they have engaged the doctor and expect from him an expenditure of time and skill for fees that are by no means equivalent, and the tendency of the profession has been to cut the loss by time-saving devices which are equally welcome to the patient herself.

It is, however, pleasing to recognize that every year there is a greater tendency to employ midwives under medical supervision for normal labours, and to my mind this is one of the most hopeful indications for lessening the abuse of forceps, for the incidence is always less in women delivered by midwives than in those delivered by doctors.

Though you may plead *force majeure*—the exigencies and demands of practice—you all recognize that the forceps rate in private practice is excessive, and my contention is that we will never get away from this everlasting and world-wide controversy on the abuse of forceps until the attitude of mind that is satisfied with—or still worse, glories in—present conditions is exorcised, and the falling back on your second line is recognized as a failure to hold the first. When that first line has been strengthened, you will find it a more tenable position than you thought.

REFERENCE.

[1] "Physiological Principles in Midwifery Practice," BRITISH MEDICAL JOURNAL, 1921, i, p. 413.

DISCUSSION.

Dr. JAMES HENDRY (Glasgow) said that, while agreeing that the conduct of a forceps case should be regarded as a surgical operation, he wondered how many surgeons would operate under the conditions which surrounded a woman in industrial practice. He hoped that in future students would be required to supervise their "indoor" cases from the beginning of labour, and not only from the time the head reached the perineum. Then they would learn to recognize that the mother could continue in labour not for a certain number of hours, but until danger threatened mother and child. This would also give more opportunity for the recognition of abnormalities, whether of the pelvis or of presentation. Improved teaching would not, however, eliminate all the difficulties—there were still the psychology of the patient to be considered and the amount of time which a busy practitioner could devote to a maternity case. They should all aim at the "hospitalization" of maternity cases, and in that way they would not only eliminate the repressing factors referred to by Dr. Fairbairn, but they would have the supervision of the cases by people with no other distant duties to perform, while, should the application of forceps become necessary, the proper conditions would be readily accessible.

Dr. R. KELSON FORD (Portsmouth) doubted whether, unless accommodation were provided by a specific fund, it would be justifiable to allocate beds in a voluntary hospital for purely obstetric cases. He pleaded for a better use of existing institutions, such as the Poor Law infirmaries, which should be if possible placed under the administration of the medical officer of health for the district. There should be more comprehensive ante-natal treatment, and all these facilities should be made available for the instruction of

students and post-graduates. That the application of forceps should be regarded as in every way a surgical operation was no doubt absolutely true, but the practicability of the matter was different. Better-class or hospital practice and poorer-class practice were so different that they could not be considered together. No measure of asepsis could possibly be attained by anyone working alone—antisepsis was alone practicable and should be their mainstay. He was afraid that too often consultants were apt to forget the conditions under which the general practitioner often had to carry on his work. Shaving the vulva was obviously the proper procedure; but did the advocates of this measure realize how often the patient refused point blank to permit it and declined to have anything more to do with the doctor who suggested it? He was certain that prolapse readily occurred after a perfectly spontaneous labour without laceration. He thought that the minimum lying-in period should be extended to fourteen days. Dr. Ford was a warm advocate of Dr. Ballantyne's method of correcting malpositions by means of a pad and binder. He thought that the fear of performing Caesarean section in probably infected cases was allowed to exceed its proper bounds.

Mr. Louis Rivett (London) thought that the abuse of forceps was entirely due to failure of ante-natal care. He did not think that the use of forceps was a factor in producing prolapse if application was made after the head had entered the cervix. Damage to the perineum was a very small factor in causing prolapse; prolapse was very rare after complete rupture. He was strongly opposed to attempts being made to stretch the cervix digitally; it practically always meant tearing, not stretching. He regarded the application of forceps to the head before it was engaged in the pelvis as an absolute abuse of forceps. He would like to ask Mr. Berkeley how many times he had seen a student deliver a patient, and if he had ever shown even his house-surgeon how to apply forceps. He agreed that it was very difficult to persuade patients to have the vulva shaved.

Dr. D. McAskie (Southsea) said that to general practitioners the remarks of Mr. Comyns Berkeley were disturbing. They had often gone home in the early hours of the morning feeling happy that they had saved two lives. Now they should go home regretting they did not see the woman a month earlier and correct the malposition or malpresentation. Seventy per cent. of the midwifery cases were now in the hands of the midwives. Midwives did not palpate the abdomen; but if this method of examination was insisted upon the midwife could diagnose an occipito-posterior case and call in the doctor in time. He was now often called in only when Nature had failed, and had to make the best of a bad job. It was too late to convert an occipito-posterior to an occipito-anterior; too late to convert a mento-posterior into a mento-anterior; too late to turn a brow case or change it to a face or vertex presentation. This condition of things was very annoying and should make Mr. Comyns Berkeley pity the lot of the general practitioner. They had still got these cases to deal with, and Mr. Comyns Berkeley's general principles did not help them much in dealing with them. Mr. Comyns Berkeley did not give the indications for the use of forceps, but referred them to the textbooks. These seldom devoted a full chapter to the subject, but dismissed it in a few lines, saying they had been mentioned under the various forms of labour; and when they looked them up they found that the authors differed in their treatments. It was disappointing, therefore, that when this subject was brought up for discussion a full discussion of the subject was not entertained. In ante-natal treatment occipito-posterior cases were changed to occipito-anterior cases and breech cases to vertex cases. In occipito-posterior presentations nine out of ten cases rotated to the front, and Dr. McAskie questioned the advisability of interfering with them. He thought that those cases in which flexion occurred should be left to Nature; and only those that showed extension of the head should be changed to occipito-anterior cases. Mr. Comyns Berkeley said that the mechanism of labour was a natural process; but he did not tell them that Nature sometimes failed. There was failure of flexion and internal rotation sometimes in occipito-posterior positions. There was failure of extension in face cases, and in face cases they had to pull the chin down when it came through the pubic arch to prevent Nature presenting the mento-vertical diameter at the outlet. Failure of flexion and internal rotation in normal labour was not made much of in the English textbooks; but on the Continent failure of flexion and internal rotation in normal labour was put down as an indication for the use of forceps. As regards axis-traction forceps, in nineteen out of twenty cases in which they were used the head was in the pelvic cavity and ordinary forceps were just as good. Even in persistent occipito-posterior cases where the head was high experience had taught him that they were often better than axis-traction forceps. He had had a case of persistent occipito-posterior position in which his axis-traction forceps slipped three times. He sent for a neighbouring practitioner to help him; his colleague did not possess axis-traction forceps, and he put on ordinary forceps, and they did not slip. He was called again to assist another colleague whose axis-traction forceps kept slipping; he put on his forceps without the axis-traction and they did not slip. Mr. Comyns Berkeley said that forceps cases were more liable to become septic. This was not the experience of the general practitioner. He feared more the cases in which something was left behind in the uterus, and this was often due to delay in the use of the forceps, resulting in an atonic uterus. Mr. Comyns Berkeley had said that the morbidity in forceps cases was greater than in normal labour. That was comparing abnormal cases with normal cases, and was not fair reasoning.

Lieut.-Colonel Andrew Buchanan, I.M.S., demonstrated by means of models how the anterior part of the head could be made to come down. He said that the teaching of midwifery contained too many distractions so that the student was unable to grasp the ordinary mechanism of labour. He claimed that his models simplified the understanding of the elementary mechanical principles of parturition.

Dr. John Campbell (Belfast) said that Mr. Comyns Berkeley had given such sound and sensible advice that no fair adverse criticism was possible. Examination of the woman during pregnancy was most important; by it they could recognize whether there was pelvic contraction of such a degree as to prevent the head from coming down naturally. They had available not only the usual methods of abdominal and vaginal examination, but also the measurement of the pelvis by x rays. By comparing the radiogram of the patient with that of a normal pelvis they could get a very accurate idea of the size of the pelvic canal. The use of every method of examination before labour would get rid of the "bad forceps" cases and the "failed forceps" cases. Caesarean section was now so safe and satisfactory for both mother and child that it should more and more take the place of severe attempts at forceps delivery. One of the most frequent mistakes made was to attempt to deliver before the cervix was fully dilated. Too often the forceps was applied as soon as the cervical canal was wide enough to allow of the introduction of the blades. Fortunately they had a remedy in the judicious use of morphine. By it they could gain time; they also soothed the patient and mitigated the anxiety of the relatives and friends until the cervix had become fully dilated. Provided the case was one in which the use of forceps was legitimate, the danger of a forceps operation was very greatly lessened by the simple rule that the cervix should be fully dilated before the forceps was resorted to.

Mr. R. J. Johnstone (Belfast) thought the discussion should be a great lesson to the teachers of midwifery present, as from the dreadful list of disasters recited by the opener it was evident that students were not properly taught before being turned out on the world. In his opinion, if the os were fully dilated in a normal case there could be very little danger in applying forceps to shorten the second stage, and when a woman had been in labour for hours he could see no objection to putting a period to her pain. In his experience sepsis was less frequent after forceps than after unassisted deliveries. He thought that rupture of the perineum, and especially subcutaneous rupture of the levator ani, was rather prevented than produced by full chloroform anaesthesia and forceps delivery.

The President, while agreeing with the views expressed in the brilliant paper which opened the discussion, felt very much in sympathy with the difficulty in which the practitioner was placed in regard to the forceps question. On the one hand there were his teachers praying him to be circumspect and moderate, and on the other an ignorant public urging him to interfere at the earliest opportunity. Time was short and the life of the doctor was a hard one. The payment for midwifery cases was foolishly small and there were wives to dress and children to educate, and all these factors tended towards the shortening of labour. He had maintained and preached for many years that midwifery was a branch of surgery and must be recognized as such both by the profession and the public before the three capital necessities for its proper practice could be obtained—adequate conditions, adequate assistance, and adequate payment. The looseness of a well known phrase common to almost all teachers and textbooks—"Forceps should not be applied until the cervix is fully dilated"—was responsible, he thought, for much harm. For what was "full dilatation of the cervix"? It was relative to the size of the diameters of the presenting part, which varied in different cases and were impossible accurately to measure in any case. It followed, therefore, that the only real proof that the cervix was sufficiently dilated to allow the presenting part to pass easily through it was that the presenting part had already passed through it. But this was not expressed in the loose phrase he criticized, but rather some indefinite measurement in inches or millimetres or a hazardous comparison between the size of the os as felt and the head of the child as the practitioner imagined it to be. The outcome was that forceps were frequently applied when the head was still in the cervix, with the result that the diameters of the presenting part were increased all round by the thickness of the cervical tissue, and this tissue becoming jammed between the head and the bone an impaction was produced in a pelvis which of itself was entirely large enough for labour to take place normally in. The teachers' phraseology should be tightened up, and the words "Until the cervix is fully dilated" replaced by "Until the head has come through the cervix." He thought that *perforation* was not done often enough. If after reasonable pulling with forceps there was still failure to deliver, then perforation would do less harm than persisting with forceps.

Dr. C. E. Douglas (Cupar, Fife) said that he spoke as a heretic in respect of the modern doctrine of non-interference. He had much enjoyed Mr. Comyns Berkeley's address, but there was a set of conditions in which the forceps was very frequently used that had so far been ignored by all the speakers. Stress had been laid on the value of Caesarean section, of *x*-ray work in pre-natal examination, and other resources available in the great centres of civilization and nowhere else. He would invite them to come with him to some lonely spot very far from these resources, to where the country doctor had to solve the problem by himself aided by an old woman, probably deaf, as his assistant. His methods were more modern than might be supposed. Mr. Berkeley had advised the use of rubber gloves and of axis-traction forceps, if any. He would say that both of these had been in common use with them for many years. The forceps should certainly not be applied until the first stage was completely over and till, say, two hours in a multipara and half an hour more in a primipara, when, if no progress was being made, there was no point in waiting longer. After all, the relief of unnecessary suffering was one of their duties. If the forceps operation was decided upon the vulva and perineum were again thoroughly disinfected, anaesthesia was begun, and the patient seen through the dangerous period of the chloroform sleep before handing over the handkerchief to the old woman. A clean tunic was put on, the hands were sterilized as for any major operation, gloves boiled with the forceps in the sterilizer were put on, and the operation proceeded with. Such was the technique. What were the results? Mr. Berkeley had spoken of the dangers of sepsis, of ruptured perineum, and of prolapse. He believed the danger of these to have been greatly exaggerated. Speaking from his own experience of over forty years he had applied forceps over 300 times, with one death from sepsis. That occurred many many years ago when sanitation was not what it was now, and the "handy wife" was afterwards found to be looking after some children sick with scarlet fever in an adjoining house. With regard to rupture of the perineum, while most fully alive to the importance of saving and of suturing the perineum he would suggest that the worst cases happened when forceps had not been used. He cited a case in a multipara where he could find no anus. On looking into the matter he found that the examining finger was resting on the posterior wall of the rectum, there having been a complete tear of perineum and sphincter ani at the last confinement, which had been attended by a midwife. The woman had made a good recovery, was able to carry on all her household duties, had manifestly had another baby, and stated that her only disability was that she could not wholly prevent the passage of flatus. And similarly with prolapse. One of the worst cases of prolapse that he had ever met with was in the person of a dear old maiden lady who certainly had never suffered from the application of forceps. Speaking generally, it would probably be found that size of hand had an influence upon this question, and that if a vote were taken the hands raised against the use of forceps would be those requiring a glove of size 8 or over; while those in favour would show hands which would go into a glove of 7½ or under.

Dr. T. G. Evans (Beckington) protested against the character given to the general practitioner by Mr. Comyns Berkeley. He never went to a case without gloves and axis-traction forceps. He had never attempted to rotate with forceps, nor had seen anyone else try to do so. He would like to know what was the alternative to forceps in the case of prolonged labour, with the head in the pelvis. He reminded the Section of the danger of subsequent pregnancies after Caesarean section from rupture of the uterine scar.

Dr. W. R. Grove (St. Ives) did not think that anyone could fail to agree that Nature was the best obstetrician. In nine out of ten delayed cases the delay could be traced to emotional causes. To combat fatigue he much preferred opium pills to morphine. As regards posture, he certainly thought that lying on the back helped the head to descend in the right direction and that the left-sided position was a hindrance. He had no use for gloves—it was just as easy to touch unclean objects with gloves as with the bare hands. He put his trust in antiseptic lotion, and strongly recommended one made up of lysol 2 drachms, ether half an ounce, and methylated spirit to four ounces.

Dr. C. J. Buchan (Catford), speaking as a general practitioner, thought that the high ideals of Mr. Berkeley and Dr. Fairbairn were out of place in general practice. They might beseech their patients to come for ante-natal examination, but they would not do so. He did not see how one could gauge the amount of force necessary to use in a forceps case until one had tried. People in hospital would accept any treatment from a specialist or anyone they thought was a specialist, but they and their relatives would not submit to the same in their own homes. The public would have to be educated. If Mr. Comyns Berkeley and Dr. Fairbairn were right the general practitioner should never do any midwifery at all.

Dr. Lewis (Southport) agreed that gloves might be a positive danger in midwifery practice. It was becoming more and more common to call the doctor only in emergency; hence the number of forceps cases were relatively higher than they used to be. He thought that much of the damage done by the forceps was due to ignorance of the proper method of application; he had himself seen on two occasions an effort made to slip in the blades back to front.

Sir Gerald Giffard, I.M.S. (Madras), claimed to have put on forceps more often than anyone present, as he had lived for years on the premises of a maternity hospital where 2,500 cases were delivered annually. He felt sure that the abuse of forceps was nearly always due to faulty diagnosis. He sympathized strongly with the difficulties of the general practitioner; at the same time it was better to be safe than sorry. If they could persuade their patients to be examined before the onset of labour they would not get difficult forceps cases. He strongly advised his hearers never to be trapped into attending a maternity case where they had to put on forceps at once. It was the surprises of midwifery which created the difficulties. They should aim at securing institutional treatment for all their cases. At all costs students should be trained on the pregnant woman.

Dr. Purslow (Birmingham) thought that all present would agree with the opener as to the danger of the high forceps operation and the inadvisability of ever applying forceps with the head freely movable above the brim; but that, in regard to the low forceps operation, especially in cases of delayed second stage due to ineffective pains, there was room for difference of opinion, and it was interesting to see how the pendulum swung from one extreme to the other in the teaching on this point. About thirty years ago at an Annual Meeting of the Association, when he was secretary of the Obstetric Section, there was a discussion on the subject; it was opened by Playfair, who stated that when he was a student there was the greatest possible reluctance to apply forceps in this class of case, and he summed up his position in the discussion in these words: "Few, I think, will deny that unnecessary delay after the head is in the pelvic cavity is not only useless but pernicious, and that by timely interference we lessen the risk both to mother and child." He (the speaker) thought that few would now deny that since Playfair's day the forceps had been used with unnecessary frequency, but he thought Mr. Berkeley had gone too far in the direction of non-interference. He entirely disagreed with Mr. Berkeley in attributing vesico-vaginal fistula to the use of the forceps, and thought that it practically never occurred in that way, unless gross carelessness was used, but that it was almost invariably due to pressure necrosis from a prolonged second stage, and might have been avoided by a timely use of the forceps. He considered that it was very bad practice to rotate occipito-posterior positions with the forceps, and on two recent occasions when called in by practitioners on account of the advent of puerperal sepsis he had found, when he had made a complete examination under an anaesthetic, that there was a deep longitudinal tear extending the whole length of the vagina; the practitioner, in each of these cases, had rotated an occipito-posterior position with the forceps, and was quite unaware of the damage done, as it was not visible until a Sims's speculum was used. On this and other points, such as the wearing of rubber gloves, and the great advantage of having an anaesthetist present, he was in entire agreement with Mr. Berkeley. He thought it very unfortunate that the consulting obstetrician was called in, as a rule, during the puerperium when he could do little to help matters, and not during labour, when he might be of much more assistance, but the attitude of the public was largely to blame for this.

Mr. Comyns Berkeley's Reply.

Dr. Fairbairn's remarks were just as full of wit and wisdom as they always are, and I need hardly say that I agree with his appeal for preventive treatment as against operative. There is only one point upon which I would venture to disagree with him, and that is his statement that the sister midwife is the most suitable person to demonstrate normal delivery to students. If such is obtainable I think that a doctor, with adequate knowledge of his subject, is preferable.

I take it from his remarks that in the main Dr. Hendry agrees with me. I understood Dr. Ford to say that it was idealistic that students should be better taught, I cannot agree with this. Those of us who are accustomed to teach medical students—and I have been doing so for about thirty years—know that one must teach students up to 100 per cent., for it is only by so doing that one can teach them enough; since they will not be likely to remember more than 50 per cent., if as much. I did not mean in my address to advocate that women should only be confined in general hospitals, as Dr. Ford seemed to imply. I think the ideal method is that, if the home of the patient be unsuitable, she should be sent to some institution where she can be attended by her own family doctor, and that in every town of any importance such institutions should be established. Dr. Ford seemed to me to harp too much on the fact that the saving of the life of the patient was the sum and total of all one's endeavours, whereas the principal duty of hospital teachers is to stress the importance of preventive treatment, as carried out at ante-natal centres. Then Dr. Ford found fault with my assertion that all women in labour should have the pubes shaved, and said they "would not stand it." But it is the duty of the medical profession to educate the public, and it is but rarely, if the reasons are properly explained, that women will refuse to be shaved. Dr. Ford thinks that more cases of prolapse of the uterus occur after labour without the use of the forceps than with its use. The impression I have got from my experience of many years in the gynaecological wards at the Middlesex Hospital and at the Chelsea Hospital for Women does not lead me to agree with him, and I feel certain, if an equal number of cases is taken, that this is not so. He thought that the percentage of sepsis in cases of Caesarean section after the futile use of the forceps was exaggerated. Amand Routh, in his celebrated monograph on Caesarean section, including reports on many hundreds of cases, states that the mortality of Caesarean section before labour and in selected cases was 1.6 per cent., whereas after attempts to deliver with the forceps had been made the mortality was 10 to 14 per cent. I understood Dr. Ford to say that he did not think that his percentage of deaths—30 per cent. in Caesarean section after the use of the forceps or other interference—was too high, but I cannot help thinking that if this was the common experience Caesarean section would have to be banished from the list of justifiable operations.

Mr. Rivett emphasized the fact that if the students were not properly taught it was the fault of the teachers. Up to a point I entirely agree with him, though of late years many teachers have done all they could in this respect. One cannot make bricks without straw, and as long as the various examining bodies do not insist on students having experience as dressers in the gynaecological wards the teachers are seriously handicapped.

Dr. McAskie seemed to think that as a rule it was too late, when the patient was first seen, to get any information worth having from abdominal palpation. I could not have a better testimonial for my insistence on ante-natal supervision, and, moreover, it is not too late to ascertain that the head is above the brim, and that the forceps should not therefore be used, yet they are very commonly used in such circumstances. I think he misunderstood my reference to occipito-posterior positions. I did not say that all these should be rotated with the hand. On the contrary, I have been all my professional life insisting on the fact that Nature should be given every chance, and that the doctor should only interfere when she failed. It is certainly better to try and rotate an unreduced occipito-posterior position with the hands than with the forceps. He really seemed to me to be speaking of forced delivery all the time, which is absolutely contrary to what I advocate. If I understood Dr. McAskie correctly it is that I have made too much of the spectre of sepsis, and that in general practice it was not nearly so common as I seemed to infer. As a fact there is no diminution of sepsis mortality either in the United Kingdom or abroad. The statistics of childbirth deaths for 1919-20 were higher than in any other period, and in New Zealand, where the matter was taken up very strongly, it was thought that this was due to the indiscriminate use of

the forceps. If I could get Dr. McAskie seriously to look at the preventive side of obstetrics I should be satisfied.

I am much obliged for the kind remarks made by Dr. Campbell, and am very interested in his report on the value of *x*-ray photographs as a means of diagnosis. Dr. Johnstone thought that my address was a very provocative one to the family doctor, and he remarked that he preferred to "curry favour with them." I do not agree with this. I have a large number of friends in the medical profession, and have received from them many letters thanking me for the help and ideas I have given them in my writings and otherwise. Moreover, I have never blamed the general practitioners as a body; it is not for me to cast the first stone, and I fully realize under what difficulties many of them work, and that their knowledge of medicine and surgery, as a whole, is greater than that of the specialist. But the specialist has a part to play. If he is placed in positions of trust it is his bounden duty, not only to the medical profession but also to the public, to give each the benefit of his experience. If he does not do so he should be retired, and someone more worthy appointed to fill his place. Unfortunately in my endeavours to reclaim certain sinners I am supposed to label all general practitioners as such, which is not true; I should not care to "curry favour" with general practitioners by neglecting to help them in those cases in which I ventured to think such help was necessary, not only for their own sake but for that of their patients. Dr. Johnstone found fault with my remark that a patient might be allowed to go eight hours in the second stage of labour. I should have thought that it was obvious from the context of my address that I did not advocate this as a general practice; my point was that *two* hours should not be regarded with the same respect as the "Ten Commandments." Neither did I say that all the forceps operations were of a major variety, but that the high forceps operation certainly was.

I thank the President for his kind remarks, and am glad that he takes up the idealistic view. Certainly I agree that perforation should be performed more often in preference to delivery with the forceps, in those cases in which undue force would have to be employed, for the rate of mortality and especially that of morbidity in the mother would be much lowered. Efficient ante-natal supervision would, however, abolish the necessity for such an operation.

I was very interested in the amusing and instructive remarks of Dr. Douglas. His description of his maternity work in Scotland was as near to my ideal as may be. Evidently Scotland, as usual, in this respect as in others, is in advance of the general practice. Dr. Douglas gave an idealistic account of the work of general practitioners in obstetrics. He could not understand a man who did not use gloves and antiseptics in midwifery; neither can I, and yet I wonder what percentage do. Dr. Grove thinks that an "aseptic hand" is better than india-rubber gloves. If he will refer to the definition of asepsis, and after this prepares his hands accordingly, he will have none with which to deliver his patients. One must, of course, prepare one's hands before putting on the gloves, and antiseptics are more efficient when gloves are worn than when the bare hand is relied upon. A speaker thought that I had brought charges against the character of the general practitioner, and it is evident that he would have advised me, thinking of my banking account, to refuse to open this discussion; but my object has been not to blame but to help the family doctor as well as I could by giving him the experience of my hospital practice, which I say again is my duty. I am glad to think that most general practitioners are on the side of Dr. Fairbairn and myself.

The last speaker attributed to me the remark that no force should be used in delivery with the obstetric forceps, which, as Euclid says, is absurd. What I did say was that no undue force should be used. Further, and he spoke as having much experience, he remarked that he had never failed to deliver with the forceps. I hope to God, for the benefit of his patients and their offspring, that in the future he will in some cases fail in his well-meaning endeavours.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

UNILATERAL GYNAECOMASTIA.

The following case is of interest on account of its comparative rarity, and because of its well marked features. I first noticed an enlarged right breast in Able Seaman X. during a medical inspection of one of His Majesty's vessels, and obtained a photograph and these particulars.

Age 23, single. He first noticed a swelling of his right breast in 1916—that is, when nearly 17 years old—and was told by a medical man that it was due to "pulling of the strings." The breast enlarged slowly for eighteen months and has remained stationary since. There has never been any pain or discomfort in any way, but he has been subject to a certain amount of ridicule from his messmates. He voluntarily stated that some days the swelling seems to lessen.

The breast consists of a uniform hypertrophy of about the size of an ordinary nulliparous female breast. It moves freely, laterally, upwards and downwards over the pectoral muscle. The margins of the gland are well defined and it is uniformly firm in consistence. The nipple is a little larger than the corresponding one and is quite soft and moves freely. He has never noticed any discharge from the nipple, nor could I obtain any by massage. His testicles and genitals appear clinically to be quite normal and well developed. There are no other signs of effeminacy, and apart from the breast he is remarkably muscular and well developed. There is no enlargement of the thyroid, nor any history of enlargement or disease of that organ. The man is quite fit and able to carry out the strenuous life of a sailor.

It is impossible to obtain a familial record apart from the statement that his mother had a swelling in front of the neck in 1915, the last time he saw any of his family.

A. A. Pomfret, M.B., Ch.B.,
Surgeon Lieutenant, R.N.

HAEMORRHAGIC DISEASE OF THE NEWLY BORN TREATED SUCCESSFULLY BY INJECTIONS OF THE FATHER'S BLOOD.

The following case is, I think, of sufficient interest and rarity to justify its publication.

On Sunday, September 2nd, at 4.30 p.m., a patient was delivered of an apparently healthy female child, weighing 8 lb. The labour, which lasted twelve hours, was perfectly normal. There had been three previous pregnancies terminating in normal labour and delivery. The other three children (two girls, one boy) are in perfect health and have never had any illness necessitating medical advice. There was no history of "bleeders" in the family.

At 2 p.m. the following day the infant started vomiting blood. I saw her at 2.30 p.m. She was then vomiting bright red blood in fairly large quantity, and at the same time there was melaena. The blood discharged from the bowel was dark-coloured and free from clots. In addition there was haemorrhage to a lesser degree from the vagina, and a petechial haemorrhagic rash over the forehead, face, and neck. The temperature was subnormal and the pulse imperceptible. The infant was cold and clammy. It was at once apparent that the haemorrhage was large, the clothes about the chest being saturated with blood. Examination failed to reveal any bleeding point in the mouth or throat.

Fortunately I had a 20 c.cm. Record syringe at hand, and I succeeded in persuading the father to let me take 20 c.cm. of blood from the median basilic vein of his right arm, and immediately injected it subcutaneously in the right gluteal region of the infant. Some ten minutes later the haemorrhage seemed to have ceased and the child fell asleep. She continued to sleep soundly until 10.30 p.m., and when I saw her again at 11.30 p.m. I found that she had just vomited up another two or three drachms of bright red blood. There was still some melaena, but considerably less in amount. The child's condition had obviously improved. I thought it advisable to repeat the injection, giving another 20 c.cm. of the father's blood subcutaneously. As before, about a quarter of an hour after the injection the infant went to sleep and slept soundly until 5 a.m. At 8.30 a.m. I found that there had been no further vomiting of blood or bleeding from the vagina. There was still some slight melaena, without any faeces mixed with it. The infant looked much better and appeared to be much more active. The next morning the child passed a perfectly normal motion, with no visible evidence of blood. She continued to make satisfactory progress. There was no further haemorrhage. During the first week there was a loss in weight of 1¼ lb. The mother had a normal puerperium.

During the first three days the infant had nothing by the mouth,

except a few sips of iced water. On the fourth day she was put to the mother's breast, and has continued feeding satisfactorily since.

This case, judging from the amount of the haemorrhage, would be considered a severe one. The sedative effect that the injections had on the child was surprising; they were followed in each instance almost immediately by profound slumber. The essential cause, in this instance, as in the largest number of cases of "the haemorrhagic disease of the newly born," was obviously the lack of some substance in the blood essential to coagulation.

F. W. ROBERTSON, M.A., M.D.

Newport, Mon.

Reports of Societies.

MANIPULATIVE SURGERY.

ON October 2nd Mr. R. C. ELMSLIE delivered his presidential address, on manipulative surgery, before the Orthopaedic Section of the Royal Society of Medicine.

The use of manipulative methods, he said, was becoming increasingly prominent. Because it could easily be acquired and could be carried out with little training, and was largely immune from gross accidents, it was frequently taken up by unqualified practitioners. Formerly such men were called "bonesetters," and claimed that by manipulation they replaced small bones. The term "bonesetter" was an ancient one, and was applied formerly to regular and irregular practitioners. In the seventeenth century there was a "bonesetter" and an "assistant bonesetter" on the staff of St. Bartholomew's Hospital; both were presumably surgeons. Recently the irregular practitioner had become known as a "manipulative surgeon" rather than as a "bonesetter." *X* rays had made the claim to replace small bones difficult to sustain. The osteopathists, rare in this country but common in America, still used this method of describing their work. They did this in spite of radiography, relying upon the comparatively complicated osteology of the spine. Sir James Paget investigated bonesetting, and published a clinical essay upon it in 1867. Howard Marsh followed his teaching, and recorded his views in the following succinct paragraph:

"Chirurgery, or handicraft, began, as we may well believe, in attempts to pull-in dislocated bones, to straighten distorted joints, and to restore movement to stiff limbs. In this dawn of the art nothing was known of anatomy or pathology; it was only seen that a limb was bent or stiff, and force was employed to overcome the defect, just as it might be used to straighten a crooked bar, or loosen a rusty lock. Soon, however, the primitive operators of those early days became ranged in two groups; the mere empirics, who went straight to the point of trying what force would do; and those who endeavoured to ascertain the nature of particular cases and the difference between one case and another—those, in other words, who cultivated pathology and diagnosis in order that they might use force with safety and advantage. The results of practice conducted on these different lines can easily be imagined. The empirics, applying force in all cases alike, and thus involving their patients in a mere game of chance, did good whenever such untempered force as they could use was appropriate, and harm whenever it was unsuitable; those who used force only when they could see a reason for doing so, and when they thought it was safe, while they did little harm, often, as their diagnosis was very rudimentary, missed an opportunity of producing a cure. In these conditions the empirics frequently had the best of it. Regular, but as yet very ill informed, practitioners were so often beaten in their encounters with disease that they lost credit in the public eye; while the empirics, making the most of their cures, and not seldom laying the blame of their failures on the surgeon whose previous treatment they alleged had done all the mischief, were accredited with powers that approached the miraculous. And we can understand their success, for every surgeon now well knows that instances are common enough in which pain and limited motion, resulting from sprains and other injuries, may at once be set right by even rough and unskilled movements, or, indeed, by an accidental wrench."

Better methods of treating injuries, together with the evolution of a well trained and experienced school of massage, had lessened the number of cases of gross stiffness of joints after injury, the class of case most often quoted by Paget, Marsh, and Wharton Hood. In spite of these improvements unqualified manipulators still appeared to be in some cases dramatically successful. The medical profession should look to its methods and inquire why so many of these cases passed into unqualified hands.

Certain factors favoured the irregular practitioner. The public tended always to believe in some peculiar ability in methods of manipulation possessed by the "bonesetter" and denied to the profession, or in an almost occult power of seeing what was wrong inside a joint. Moreover, the unqualified manipulator could advertise either directly or through the mouths of his patients. A third factor, and perhaps the most important, was the fact that the failures of the irregular practitioner were almost always hidden. The patient whom he cured boasted of the fact; the patient whom he failed to cure, or made worse, was perhaps somewhat ashamed of his credulity, and kept silent on the matter. The failures of the irregular manipulator were very many. Marsh mentioned two cases of sarcoma and one of spinal caries treated by manipulation. Such gross cases were perhaps becoming rarer, but Mr. Elmslie himself had seen a patient with myositis ossificans around the knee rendered so ill by the manipulation of a bonesetter that complete rest of the joint for two and a half years was necessary; a youth with slight spinal injury rendered a confirmed neurasthenic with coccydynia through manipulation of the coccyx; a young woman converted by osteopathy into an apparently hopeless neurasthenic; and a large loose body in a knee so manipulated that it blocked full extension for four years. Moreover, cases of obvious fraud could be quoted: a joint with bony ankylosis had been treated by manipulation for a year, the patient being promised a restoration of mobility; a dislocated thumb was treated for three months with improvement of movement in the direction of excessive hyperextension; and a normal shoulder was stated by a bonesetter to be dislocated. In this last case it appeared that the bonesetter, confronted with an *x*-ray photograph showing the joint in place, countered with a radiogram of a dislocated shoulder which he stated was normal.

Errors of omission in which the unqualified practitioner had stated that the condition was outside his province were common. Such patients were often cured by a simple manipulation by a medical man. In addition, cases in which manipulation had failed to cure or in which the trouble had recurred were in the experience of many. Often in these cases the bonesetter was not to be blamed for failure. If the patient had any justifiable complaint it was because a certain cure had been promised where no certainty was possible. But when failure was due to insufficient care in diagnosis or to inadequate knowledge of pathology, or to the use of irrational methods, the manipulator should be blamed.

All medical men had their failures. The real interest of the profession, and particularly of the orthopaedic surgeon, was to frame such rules of treatment as would leave as few cases as possible for the unqualified manipulator to treat.

Looking back upon his own practice, the speaker would venture to make the following suggestions. It was most important that in treating all bone, joint, and muscle injuries, as accurate a judgement as was possible should be made upon the pathology of the condition. If there was inflammation present, or any condition indicating rest and contraindicating mobilization, let them say so. If they were right the patient would never be cured by any practitioner taking the opposite view. They should remember the common error of assuming that the inflammatory reaction to a simple injury indicated rest. That was not so. A sprain, providing that an important ligament was not ruptured or unduly stretched, recovered most rapidly with normal use. If necessary the joint should be supported. An injury to a small portion of muscle required use as soon as pain would allow. In cases of damage and displacement of the internal semilunar cartilage of the knee the joint should be used as soon as possible after the displacement had been reduced. Some years ago he treated an oarsman in training for an important race who displaced the internal semilunar cartilage nine days before the race. The displacement was reduced twelve hours after the injury. The patient was only kept out of his boat for twenty-four hours, and finally rowed with an apparently normal knee. He had had no trouble since.

The second point was never to advise operation for the removal of a semilunar cartilage which had once been displaced and successfully reduced. Frequently the accident never recurred. There were many patients giving a history of recurrent trouble with a knee, which sounded superficially like a displaced cartilage, but in whom true locking of the joint had been absent. Mr. Elmslie treated all these cases by manipulation, warning the patient that if the cartilage was damaged there might be a recurrence of the trouble necessitating operation. He believed that many of the so-called cartilage injuries cured by bonesetters came into this class, and that there had never been damage to the cartilage at all. Other cases so "cured" were those he had already mentioned in which the cartilage was displaced once and once only. In them the cartilage was presumably displaced by manipulation into a position where it gave no trouble. He did not believe that the bonesetter had any special manipulative tricks. If so, he ought to disclose them, just as any of the audience would put on record any new method which might be devised.

It was impossible to enumerate the many other conditions amenable to treatment by manipulation. They ranged from joints and muscles painful on account of apparently trivial restriction of movement, to gross cases of stiff joints, of adherent muscles, and nerves such as the sciatic which were fibrosed after an old-standing neuritis. He would suggest that wherever there was possibility of improvement by well devised manipulation it should be tried. If the pathology was correct they could do no harm. Often they would cure the patient. How much improvement they could promise would depend on individual knowledge and experience. Whenever a joint or muscle was apparently normal, but yet was painful, manipulation should be tried. If disease and mechanical effect had been eliminated no harm could result, and in nine cases out of ten some minor adhesions, undetectable by clinical examination, would be felt to give, and the patient would be cured. They failed to cure by manipulation most often because they failed to give the method a trial. Let them use it freely, restrained only by their knowledge of pathology.

Reviews.

SCIENTIFIC METHOD.

Yet another book on scientific method, and this not a small one. However, the volume is to fill a place in a series; and many people who leave old works in their dust will read a new one. Moreover each writer has his own way of restating old problems; and the fresh and bright, if somewhat diffuse and discursive, style of Mr. Ritchie's volume, not without a salt of humour, makes it an interesting and pleasant book for the general reader. Taken as a whole Mr. Ritchie's *Scientific Method*[1] is able, comprehensive and, in our opinion, right in its main argument and conclusions; if in friendly controversy we might be tempted to challenge some parts of it we are compelled by reason of our space to resist the temptation.

After an introductory chapter, Mr. Ritchie divides his subject into the following sections: The External World, Natural Laws, The Validity of Laws, Measurement, Theories, Conclusions. Some such artificial divisions must, of course, be made, but they entail overlapping, repetitions, and divorces of thought; so that it is less easy to get a grip on the book as a whole. And the style is hardly tight enough. In a second edition more might be done to whip the matter together and condense it; and some mechanical aids—such as indents or subheads—might help the author to concentration, and the reader to comprehension.

The problem of the formulation of our knowledge, of the establishment of principles on which forecasts may be founded, has occupied the mind of man ever since he began to think at all. As Mr. Shann says, in his excellent little book on *The Evolution of Knowledge*, the need of forecasting the consequences of voluntary action drove even the early and empirical man to systematize the results of his experience; and, as the elements of supposition and expectation are functions of the whole nervous system, these faculties may have arisen at an early stage of evolution. The empiric is not without principles, but he likes them familiar and traditional, even if out of repair.

For ordinary argument, the presumption of a world external to sense must be accepted; even if it be but a convenience of thought. So again, as a thing can be known only as it changes, and as with it all other things change (as an ancient sage well said—to abstract any single item from the cosmos would be to alter the whole), to isolate it for analysis in a "specious present" can be but a convention. As we take all knowledge to be for use, immediate or ultimate, as for forecasting, so every new abstraction must from time to time be refilled with its proper content, that it may be verified and reaffirmed. If theory and experience fall out of agreement the theory has been so far incomplete.

Are not scientists a little too chary of philosophy—that is, of the study of principles? If the scientist is to know where he stands—to be Plato's *συνοπτικός*—he cannot altogether ignore the lead of philosophy, nor its criticism of the natural sciences. As Mr. Ritchie says, outside physical science little colonies of knowledge are to be found; some flourishing, some languishing. To propose to understand a whole without analysing it by parts would be a formidable job. Yet it is only by conventions that we can clearly distinguish between the principles of continuous natural growth and our methods of obtaining a knowledge of them; between, that is, experience and thought. What constitutes evidence? How far is a universal a *key*, or a mere negation of individual properties? The scientist must assume a correspondence between the perceptible universe and the patterns of our brains; but is there anything more than this, any vital blend of consciousness—of inner light—with the object? Was there anything in the Nous of Anaxagoras, or in medieval dualism, or in Maxwell's "sorting demon"? In a phrase,—What does the mind supply, and what is given to it? As Mr. Ritchie and Mr. Shann impress upon us, we scientists still are not unaffected by the error of Francis Bacon, who supposed that by a ladder of axioms any industrious observer could climb up to general laws. The Aristotle of his day was, of course, an imperfect and often false paraphrase. Many scientists are now beginning to realize that a kind of imagination, different seemingly from the creative or concrete, some genius for hypothesis, is essential to fertile research. But, as men of this larger reason are rare, may it not be better to strengthen the position of the few than indefinitely to multiply studentships; and to be careful not to superannuate men so endowed at ages of maturity? The faculties of the fine (creative) arts bloom much earlier than those of scientific range.

We are too ready to scoff at the "unbridled and windy speculations" of the great Ionian sages, confusing their hypotheses with medieval dialectic. The frailty of their great conceptions lay not in the concepts themselves—these were indeed marvellous forecasts of those of modern evolutionists—but in their lack of building materials. Hippocrates in medicine, and Aristotle in animated nature began those collections of materials to which later workers have added so vastly that, fed by them, stouter and stouter superstructures have been built. As life from chaos, so theories have grown upon the sod of defunct hypotheses.

In the recent divorce of science from letters science has torn away trappings which hindered its course; but it has lost much of value; it has lost concinnity, and precision of terms and words. What would become of a mathematician, or of a logician, who used ambiguous signs and terms in his demonstrations? Yet scientific writing is full of such laxities; some of them, we regret to say, Mr. Ritchie does not indeed defend, but accepts in order to settle up with the man in the street. For instance, a theory is the highest form of scientific truth; there is no other word for it; yet by too many persons "theory" is used indifferently for any assumption or opinion. Again, a "fact" is something that has happened—an event—*whether we know it or not;* and by itself, out of relation to other facts, it is nothing. To call

[1] *Scientific Method: An Inquiry into the Character and Validity of Natural Laws.* By A. D. Ritchie. The International Library of Psychology, Philosophy and Scientific Method. London: Kegan Paul, Trench, Trübner and Co. 1923. (Demy 8vo, pp. viii+204. 10s. 6d. net.)

inferences and opinions "facts" has been one of the curses of science. We should all be the better for a severer discipline in verbal accuracy, even Mr. Ritchie. Lord Riddell, in his bright little book *Some Things That Matter*, sharply corrects this very error, rebuking those who describe inferences as "facts," and mistake inferences for facts. The witness-box is an admirable school for doctors of all faculties.

Under the head of teleology is not something wanting? Mr. Ritchie deals with the idea rather diffusely, but only with the faded misconceptions of a pre-existing mould or type or contrivance. But there is a returning inclination to a teleology of some form other than those outworn, narrower, and empirical notions; something architectonic, such as, in the gradual phases of the past, has marshalled the forces for the construction of a crystal or a brain; something, for instance, that governs the collections and troopings of cells as they sweep into orderly ranks, gathering together from parts near and remote as if animated by a common purpose, guided by an unseen wand each to its own group, for the construction of this part or organ or that; materials not blindly shaken into any sort of shape, but themselves seeming to foresee and conspire to some larger end. C. A.

AVITAMINOSIS.

DR. J. LOPEZ LOMBA has published an interesting critical study of certain aspects of the vitamin problem supplemented by an account of his own original work. The monograph is entitled *Etudes expérimentales et critiques sur l'Avitaminose*.[2]

The author begins with a comparative study of the vitamin needs of various forms of vegetable and animal life, and goes on to discuss the needs of the lower forms of vegetable life, and particularly the needs of bacteria and fungi, for minute quantities of thermolabile substances. A great deal of work has been done on this subject, and the number of such substances described in the case of pathogenic bacteria threatens to exhaust the alphabet. Unfortunately the whole subject is in a very obscure state. The best established of such factors is the organic substance stated to be essential for the growth of yeast. Evidence for such a substance was first revealed in the celebrated controversy in 1870 between Liebig and Pasteur on the subject of spontaneous generation. In 1901 Wildiers definitely described an organic substance, which he named "bios"; it was, he said, essential for yeast growth. In the last few years many attempts were made to identify "bios" with vitamin B, but these attempts failed, and recently Nelson, Fulmer, and Cessna have produced strong evidence to show that yeast does not require for its growth the presence of any organic substance which the yeast cells cannot themselves synthesize. The very uncertain results yielded by this prolonged controversy indicate how incomplete is our knowledge concerning the part played in vegetable life by substances having an action in any way analogous to that of the vitamins essential for vertebrate life.

Dr. Lomba also summarizes existing knowledge concerning the needs of invertebrates for vitamins, but in this case also the evidence is very incomplete and often contradictory. A good classified bibliography is given, however, and this should be of great value to those interested in these problems, since the vitamin literature is so extensive that it is very difficult to obtain information concerning the work done on any particular problem.

The author gives a fairly full account of our knowledge concerning the comparative needs of different vertebrates for vitamins, although no reference is made to some of the work that has been done upon farm animals. The comparison of the vitamin needs of vertebrates brings out many curious and inexplicable facts. For example, pigeons, it is said, resist deprivation of vitamin A indefinitely, whilst such deprivation kills fowls within two or three months. The guinea-pig is killed by lack of vitamin C in a few weeks, whereas the adult rat and rabbit resist indefinitely. The comparisons set forth are highly interesting and the work is particularly valuable, because this aspect of the vitamin problem is rather neglected by most books on the subject.

The chief original work done by the author has been the study of the changes of weight produced by vitamin lack in the different organs of the body. He deprived large numbers of pigeons and guinea-pigs of vitamin B and studied the progressive changes in weight of the various organs from the commencement of vitamin deprivation until death. The curves obtained are very curious, for many of the organs show extraordinary fluctuations in weight. The suprarenals, for example, at first lost weight, and later, in the last week of life, underwent great increase; on the other hand, the testicles, pancreas, thyroid, and spleen at first gained in weight and then lost weight rapidly during the last few days of life.

The changes observed in the guinea-pig do not altogether agree with those observed in the pigeon, but the facts brought forward show that the weights of the different organs observed after death from vitamin deficiency give little evidence as to the preceding changes during the progress of the deficiency process. From these curves and from other facts the author concludes that the symptoms, physiological disorders, and pathological lesions observed in avitaminosis are, above all, dependent on functional derangements of the vegetative nervous system, produced by the lack of vitamins. That is to say, he believes that the essential effect of vitamin lack, and particularly of lack of vitamin B, is disorganization of the sympathetic and parasympathetic systems, associated with a disturbance of the functions of the endocrine organs, and that these disturbances produce the symptoms and lesions observed.

Thus, in a single bold effort of the imagination, the author links up avitaminosis, sympatheticotonia, parasympatheticotonia, and endocrine deficiency. The idea is audacious, but the facts established concerning all these subjects are so incomplete that it is doubtful whether such a comparison is likely to advance our knowledge materially.

[2] *Etudes expérimentales et critiques sur l'Avitaminose.* By J. Lopez Lomba, M.D., D.Sc. Paris: Jouve et Cie. 1923. (Roy. 8vo, pp. 347; illustrated.)

TONSILS.

THE importance which the pathology and surgery of the tonsil have assumed in recent years is reflected in two admirable monographs setting forth the views of the Boston school and the St. Louis school. The first of these is already well known, for Dr. BARNES established his reputation by a previous edition of his book on the *Tonsils*[3] nine years ago. In the second, Dr. SLUDER has gathered into a well illustrated volume everything that there is at present to be said on the subject of *Tonsillectomy*[4] by means of the guillotine.

The anatomy, embryology, general physiology, and pathology of the tonsils are well reviewed in the opening chapters of both these works. In this part of the subject there is but little that is controversial, but none the less it is somewhat speculative, so that it is difficult to give a clear exposition. The authors, however, have been highly successful. It is when the subject of the surgery of the tonsil is reached that the great divergence of opinions is to be found, though on one essential point they are unanimous—namely, the necessity of complete removal.

Dr. Barnes describes fairly and adequately the various methods of removing tonsils, but he states that he always dissects tonsils himself "for the reason that good technic cannot be maintained if the operation is only done occasionally, and a certain number of tonsils must be removed by one of the dissection methods." This is a logical position, but the reason given for performing a more severe operation in all cases, when in most of them the quicker, simpler operation of Sluder is sufficient, is inadequate. Dr. Barnes advocates the drainage of quinsy by removal of the tonsils. No doubt the drainage provided by this

[3] *The Tonsils.* By H. A. Barnes, M.D. Second edition. London: Henry Kimpton. 1923. (Med. 8vo, pp. 217; 45 figures. 25s. net.)

[4] *Tonsillectomy.* By Greenfield Sluder, M.D. London: Henry Kimpton. 1923. (Sup. roy. 8vo, pp. 176; 90 figures. 25s. net.)

method is nearly perfect and in his skilled hands has achieved the success which he claims. Nevertheless it is not a procedure likely to be of general application for this common complaint, and it is not difficult to imagine disastrous results, should this advice mislead the inexperienced. The indications for operations, as expounded by Dr. Barnes, are too rigid and there is a failure "to make the punishment fit the crime." In the chapter on complications and sequelae of operations on the tonsils an interesting account of pulmonary abscess following tonsillectomy is given. This complication appears to be commoner in America than in this country, but fortunately it is everywhere so rare that reliable statistics can scarcely be obtained. The effects of treatment of enlarged tonsils by *x* rays and radium is fairly discussed; it would appear from the general results that these methods are unlikely to have a wide field of utility.

The work of Dr. Greenfield Sluder is frankly a plea for the use of the guillotine in the removal of tonsils. He has, however, produced a complete work on the tonsils ranging from their embryology to their surgery. The most important part of the book is the detailed description of the operation and all that appertains to it. The author strongly recommends the use of nitrous oxide as the anaesthetic. He states that there has been no case of pulmonary abscess in his practice and that only one case of pneumonia has occurred in a series of 20,000 operations. It appears from the statistics that the use of a suction apparatus is an important factor in the prevention of pulmonary abscess. A fascinating part of the book deals with the evolution of the guillotine; it begins with the uvulotome of Canute of Thorbern, a Norwegian peasant; the illustration suggests a thumbscrew rather than a surgical instrument. This historical part is profusely illustrated with figures of instruments. A significant fact is that some twenty modifications of the Sluder instrument and different forms of guillotine are represented, indicating that the operation presents difficulties which many have endeavoured to overcome by altering the design of the instrument. The instructions for performing the operations are given in most minute detail, and the artist has produced drawings which support and illustrate very well the points elaborated in the text; he is to be congratulated on his success, for the operation does not lend itself at all easily to graphic representation and has baffled many. A chapter is devoted to the removal of adenoids, and the author recommends an instrument which makes it possible to do the operation under direct vision.

The general style and appearance of both these books is excellent and they should be studied carefully by everyone taking any serious interest in laryngology.

CRIME AND INSANITY.

Dr. William A. White, the well known American psychiatrist, has written a volume on *Insanity and the Criminal Law*[5] in which he discusses the possibility of applying modern psychiatric principles in dealing with crime. Writing from the standpoint of analytical psychology he shows how the concepts of crime and criminal have grown out of a consideration of acts rather than a consideration of the actors, and he welcomes the increasing tendency to take into account the personality of the criminal in relation to the crime he has committed. The theory of the treatment of crime which Dr. White develops resolves itself into two parts. First, to do away as far as possible with the conditions (mental defectiveness, insanity, immoral social conditions, etc.) out of which crime grows; and secondly, the salvaging of the criminal for social usefulness. He considers that the criminal in the majority of instances may be regarded as having a certain percentage of social value, and that it is therefore the function of the State to try to make that amount of energy available as a social asset rather than to allow it to be wasted in socially destructive activities. The author regards crime as a social disease and his main contention is that it should be treated as such, as the following quotations show: "Criminology, taking its cue from medicine, aims at preventive principles, or, in lieu of that, then the next best thing the social rehabilitation of the criminal. . . . The situation is analogous to the relation between physician and patient only that here the disease is not individual but social and the place of the physician is taken by the State."

Dr. White devotes much attention to what he regards as serious defects in the legal machinery for dealing with those cases in which a plea of insanity is raised in criminal trials. He discusses more especially the question of expert testimony, and expresses himself as convinced that the present procedure, in which the medical witness is treated as a partisan, makes it practically impossible for the expert to present a scientific position from the witness-box. He favours the suggestion, made by the American Institute of Criminal Law, that the judge may call in non-partisan experts to testify at the trial, and that these experts may be permitted to read a written report. As the author observes, this method of presenting the evidence to the court permits the criminal act to be described in its proper setting, to be given its proper value in a general behaviouristic survey of the personality, so that the real nature of the problem which confronts the court in the person of the defendant can be adequately presented. Dr. White's large experience enables him to describe a number of instances in which the plea of insanity has been raised in criminal trials, and his discussions of these cases are full of interest. We can recommend this book to all those who are interested in the problem of the criminal.

THE COMING GENERATION.

The *Claims of the Coming Generation*[6] is a volume of essays by well known writers, based on the proceedings at the seventeenth annual conference of the National Birth Rate Commission, and arranged by Sir James Marchant. There is nothing very new in the essays, which represent the views of many earnest thinkers on social improvement. It may be of some interest, however, to trace the principles which run through this series of essays. In the first place the title of the volume suggests the existence of "rights" for all human beings, and Dean Inge opens the symposium with an essay on the "Right to be well born." The Dean of St. Paul's holds that, "every child has the right to be well born." Therefore he makes an appeal to the medical profession to use "their collective authority in educating and influencing public opinion." Dean Inge draws up a list of subjects for an official handbook to be issued by the profession; in this list he includes the laws of heredity, the inherited tendency to certain diseases and moral defects, racial poisons, the stigmata of degeneracy, favourable age for marriage, effects of race mixture, the question of compulsory health certificates before marriage, and the best interval between births. Never mind, says the Dean, if half these questions cannot be answered with any certainly; let us hear the evidence, and so be gradually educated up to initiating legislation against obviously degenerative tendencies. The contemplation of legislation has the merit of inferring the imposition of "duties" on some portion, at all events, of the community; but in this age, when rights are generally emphasized so much more strongly than duties, it might have been well to call attention to the latter in the title of the book and of the Dean's essay.

Not all the contributors are eugenists. Thus Sir Arthur Newsholme prefaces his observations by the statement that "failures in parental care are the exception, not the rule," and by the further statement that—omitting the case of a few well defined diseases of somewhat rare incidence—"the efforts of eugenists to influence family alliances have insufficient scientific basis for the making of practical recommendations." Nevertheless the eugenic idea runs through many of the essays, as

[5] *Insanity and the Criminal Law.* By William A. White, M.D. New York: The Macmillan Co. 1923. (Cr. 8vo, pp. 281. 12s. net.)

[6] *The Claims of the Coming Generation:* A consideration by various writers arranged by Sir James Marchant, K.B.E., LL.D. London: Kegan Paul, Trench, Trübner and Co., Ltd. 1923. (Cr. 8vo, pp. 175. 6s. 6d. net.)

instance Mrs. Scharlieb's statement that "each young couple should exchange medical certificates of health and of fitness for matrimony," and Mr. C. J. Bond's suggestion that "the nation requires child fanciers more than dog fanciers, and homo-culture as well as horticulture and agriculture."

The "sex problem" occupies much of the attention of the authors of this book. In this case also there is some divergence in the views expressed in the various essays. Thus, in the opinion of Sir Frederick Mott, "it is a mistake to lead the young child, as a general rule, too far into experiences that the adult alone can understand and appreciate in their full biological significance." Professor J. Arthur Thomson, on the other hand, thinks that "there is much to be said for sound biological training," and that "the functions of sex and reproduction should be discussed in the physiology class in the higher school just as frankly and detachedly as the functions of secretion and respiration." At the same time the professor notes that no one can be sure on *a priori* grounds of the results of a course of instruction in sex hygiene in the higher forms in school. "It is a matter for experiment, and the basis of experiment is not as yet large. . . . When sex instruction becomes intimate and personal there is a risk of bringing sex feelings into the focus of consciousness prematurely." Mr. Bond goes further than his collaborators and says that "we must entrust the duty and privilege of giving advice and instruction on these vital subjects [that is, sex matters] to carefully selected and properly trained teachers or other suitable persons."

Several of the writers mention "self-expression" and "self-realization" as the true aim of life, and the Rev. R. C. Gillie asserts that the trend of enlightened education in recent years has been unmistakably in the direction of emphasis on personality. Whether self-realization is the aim of life, or whether greater happiness is to be found in a life of discipline and duty, is a matter for the philosophers; but Mr. Gillie suggests that "when personality has been developed, it may easily be perverted through lack or neglect of right channels of expression." "Some people," he adds, "are obsessed already by what has been called the fetish of self-fulfilment."

Sir James Yoxall writes an interesting little essay on the future for elementary education. He sees no prospect of the school segregation of classes in the community passing away during the present generation, but he looks forward to a dignifying, magnifying, and glorifying of the name and mission of the elementary school.

From the trend of the ideals of the writers in this volume it may be inferred that nearly all of them would view with equanimity a much larger control of the individual by the State than exists at present.

DENTAL TEXTBOOKS.

In the training of the dental student two main lines of thought are apparent. On the one hand dentistry is regarded as an essentially mechanical art and the great object is to train the student's fingers; on the other hand, the mechanical is regarded as subservient to the biological factor and every effort is made to teach the sciences of life and death, of physiology and medicine, and to train the powers of observation. The four years' curriculum seems but a short time, yet the teacher must teach. A perception of the difficulties both of the student and teacher has induced Mr. Curzon-Miller to attempt a *Physiology for Dental Students*.[1] It is written avowedly with an eye to the L.D.S. examination, and "while modern and generally accepted facts of the subject have been stated somewhat dogmatically, speculative discussions have been intentionally omitted." Quantity is thus greatly diminished, but quality suffers sadly. The charm and mental stimulus of a well stated argument are entirely lost, and sometimes, as in the sole brief reference to clasmatocytes (p. 13) or in the definition of absorption (p. 53), brevity has gone so far that the statements may apear meaningless to the student. If, however, to those whose teaching was conducted in a more leisurely fashion this volume seems to savour somewhat of the cram-book, the author must be given credit for having by judicious selection and elimination compiled a handbook of physiology which will not only suffice for the needs of the L.D.S. examination, but will help the student to understand many otherwise obscure statements in current medical and dental literature. In this latter respect we may, perhaps, make one or two suggestions. The dental student probably, in common with the medical student, would like to know how largely, in the physiologist's opinion, uric acid bulks as a factor in human health or disease; and the dental student, at least, would like to know his (the physiologist's) views as to the influence of thyroid, parathyroid, or other ductless gland, on the formation of the teeth. On these points the author might well depart from his accustomed brevity in his next edition.

Mr. Gibson's *Chemistry of Dental Materials*[2] is largely an elaboration of notes of lectures delivered to the dental students of Guy's Hospital, and, as it is intended only as an introduction to the more specialized literature of the subject, the author has limited himself to representative materials. To describe adequately the large and increasing number of substances available in dental practice would, the author says, require a comprehensive dictionary. Lest any dental student should thereby be terrified, we hasten to say we do not agree. The chemistry needed by a dental student can be, and should be, presented to him in comparatively small volume divested of that curious tendency to magnify and mystify so often apparent in dental education. The present volume seems, indeed, to cover the ground pretty thoroughly. It contains chapters on the general properties of metals; on platinum, gold, silver, copper, aluminium, mercury, zinc, tin, lead, iron, nickel, cadmium, antimony, bismuth, and their alloys; on porcelain, plaster-of-Paris, dental cements; abrasive materials; anaesthetics and antiseptics; rubber, vulcanite, and gutta-percha; with a short introductory survey of the materials and their uses. We may say at once that the work is generally of a very high standard, and, despite the author's prefatory warning, we detect no important omission. Perhaps we may be forgiven for asking how it shall benefit the dental student to learn, even in outline, the methods of extraction of metals from their ores—there are surely matters of more immediate concern to which his mind might be directed! While, however, the general standard is high, the book in places betrays its origin in amplified notes. Page 27 may be cited, and the description given there of a eutectic alloy particularly. The assertion that vulcanite is such a poor conductor of heat that the constant wearing of a vulcanite plate in the mouth causes a lowering of vitality of the soft tissues and an excessive resorption of the hard tissues is unconvincing. The note on the soldering of platinum takes no account of the common practice of soldering gold "backs" to the platinum pins of "pin-teeth" with gold solder. Perhaps the best chapter in the book is that on anaesthetics and antiseptics; it alone is a sufficient recommendation of the book.

NOTES ON BOOKS.

The textbook on experimental bacteriology and infectious diseases by Professors W. Kolle and H. Hetsch of Frankfort, which has now reached its sixth edition[3] and has been translated into French, Italian, Spanish, and Russian, consists of two volumes covering an enormous field. The work is divided into seventy-six lectures, of which the first fifteen are introductory and deal with microscopical technique, the morphology and biology of micro-organisms, disinfection, immunity, anaphylaxis, and serum diagnosis and treatment,

[1] *Physiology for Dental Students.* By A. G. Curzon-Miller, B.Sc., L.M.S.S.A.Lond., F.C.S. London: E. Arnold and Co. 1922. (Demy 8vo, pp. viii + 205; 81 figures. 10s. 6d. net.)

[2] *The Chemistry of Dental Materials.* By C. S. Gibson, O.B.E., M.A., B.Sc.Oxon., etc. London: Benn Brothers, Ltd. 1922. (Demy 8vo, pp. 176; 24 figures. 12s. 6d. net.)

[3] *Die Experimentelle Bakteriologie und die Infektionskrankheiten mit besonderer Berücksichtigung der Immunitätslehre.* Ein Lehrbuch für Aerzte und Studierende. Von Professor W. Kolle und Professor H. Hetsch. Sechste umgearbeitete Auflage, 2 Bände. Berlin: Urban and Schwarzenberg. 1922. (Double cr. 8vo. Band I, pp. xviii + 636; 41 plates, 79 figures. Band II, pp. xi + 1376; 73 plates, 135 figures.)

while the remaining chapters are devoted to the consideration of individual diseases or groups of diseases caused by micro-organisms as well as infectious disorders of unknown etiology, including tropical and veterinary medicine. A bibliography of almost entirely German authorities is appended to each lecture. Although the greater part of the work is taken up by bacteriological considerations it is not intended for bacteriologists exclusively, for in addition to a short account of the symptomatology considerable attention is given to the epidemiology and prophylaxis of the various infectious diseases as well as to serum and vaccine therapy. The paper and printing are excellent, and there are numerous beautiful half-tone and coloured plates and micro-photographs.

One of the most pleasing forms of introduction to the study of chemistry is that in which well known substances and familiar events are reviewed in a scientific light, and their properties and transformations described in terms conveying the ideas first impressed on the founders of chemical science. Such a book is that of KINGZETT, now in its fourth edition.[10] Illustrations and diagrams necessary for the understanding of manufacturing processes are provided. It may, in fact, be described as a book of pictorial chemistry containing more information than could be set down in the same area of letterpress.

The Ventilation of Public Buildings,[11] by ROBERT BOYLE, contains a number of plans of public buildings illustrating the author's method of "natural ventilation." It dispenses with all mechanical contrivances for forcing currents of air through the building and depends solely on the natural upward currents which are present when outlets are arranged in the roof and inlets of proportionate size provided in the lower parts of the building. The text consists almost entirely of quotations from the opinions of scientific writers, of newspapers, and of extracts from reports of Government and other committees, in praise of the system.

[10] *Chemistry for Beginners and Schools* (with glossary). By C. T. Kingzett, F.I.C., F.C.S. Fourth edition. London: Baillière, Tindall and Cox. 1922. (Cr. 8vo, pp. viii + 237; 76 figures. 5s. net.)

[11] *The Ventilation of Public Buildings*. By R. Boyle. London, Paris, New York: R. Boyle and Son. 1923. (Pp. 51; 14 illustrations. 6s.)

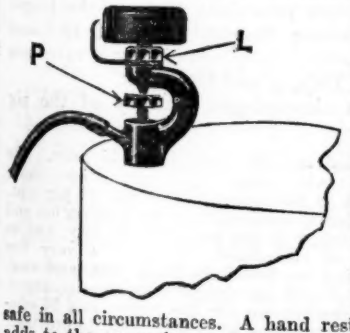
MEDICAL AND SURGICAL APPLIANCES.

Aseptic Clinical Thermometer Case.

CLINICAL thermometer cases are known which are adapted to contain disinfectants, so that each time a thermometer is inserted into its case it is dipped into the disinfectant. In order to avoid repeated use of the same disinfectant, while at the same time facilitating the carriage of disinfectant with the thermometer case so that it is always ready to hand, Dr. Charles Pentland has devised a thermometer case with two compartments; one is for the thermometer and the other is fitted with a glass tube in which potassium permanganate crystals or any other suitable solid disinfectant may be carried. This tube has a small hole at the lower end; a few crystals of disinfectant are shaken into a glass of water to form a solution in which the thermometer is immersed. This allows the thermometer to be disinfected by the bedside of the patient. Dr. Pentland has had a case in use now for nearly twelve months, and finds it acts perfectly. The appliance is made by Messrs. Arnold, Sons, Bell and Croyden, 50, Wigmore Street, W.

Bomb Ether Apparatus.

Drs. S. R. WILSON and K. B. PINSON (Manchester) write: The bomb apparatus illustrated was first described in February, 1921, and has been in constant use ever since. We have, however, made additions and improvements in it. The valve illustrated has been made a great deal better. The nut, P, is to tighten the packing when the action becomes loose, and L is to adjust the pointer; the filler plug is larger and is now placed on the top, and incorporates a device which prevents overfilling. A safety blow-off has been added, which makes the apparatus absolutely safe in all circumstances. A hand rest also has been fitted which adds to the convenience of the user when manipulating the valve. The apparatus has been in everyday use by one of us for the last six years; indeed, we think it the easiest and most efficient way of administering ether. It is now manufactured by the Manchester Machine and Instrument Manufacturing Co., Ltd., 2, Booth Street, Manchester.



Nova et Vetera.

THOMAS WAKLEY AND THE "LANCET."

THE mysterious outrage in Argyll Street which interrupted the course and very nearly ended the life of Thomas Wakley more than a hundred years ago was as remarkable as was the subsequent career of that vivacious journalist and politician.

In his *Life and Times of Thomas Wakley*, the present editor of the *Lancet*, Sir Squire Sprigge, has admirably chronicled that career. Thomas Wakley was an impulsive, generous-hearted man who furiously resented the abuses and the injustice which were then rife in the medical profession. Inspired to a great extent by Cobbett, he and his assistants did not hesitate to attack in unmeasured terms the very heads of the profession. He seems positively to have revelled in controversy, and, far from thin-skinned himself, it does not seem to have occurred to him that any of his opponents might be more sensitive than himself, or that there were any decencies worth observing in newspaper controversy. Those were the days of duelling, whose apologists used to argue that the fear of being called to account on the field of honour restrained the tongue and the pen; yet journalists—both lay and medical—allowed themselves a licence which is unheard of in our more polite times, when an appeal to the arbitrament of the pistol or even of the fist is no longer tolerated. Dickens probably did not greatly exaggerate when he described the Eatanswill editors, Pott and Slurk; and the "Hole-and-Corner Buffery" which Mr. Pott denounced had had its forerunner in the "Hole-and-Corner Surgery" which roused the ire of the *Lancet*.

We have come across the record of only one medical duel in this period, that between Dr. Forbes of the Westminster Ophthalmic Hospital and Mr. Thomson. The cause of quarrel was a dispute between Guthrie and Forbes as to the management of the hospital. Thomson warmly espoused Guthrie's cause and challenged Forbes. They met on Clapham Common. Neither of the principals seems to have been much of a marksman, for after three exchanges of shots without any casualty the seconds intervened, because, as they reported, "they could not, consistently with their own characters, permit the affair to proceed any further, however much they might regret that a reconciliation had not been effected." The seconds were probably more disappointed with the negative result of the duel than were the principals, and they seem to have thought that a bullet wound would have had a conciliatory effect.

A perusal of the early volumes of the *Lancet* will repay the student of the history of medicine and of the humours of journalism. One of the objects of the paper was the publication of lectures delivered by hospital surgeons and physicians, and it wisely began with the greatest of these, Sir Astley Paston Cooper. Sir Astley enforced his opinions with illustrations from his wide experience, as, for instance, when he told his hearers how a St. Thomas's dresser persuaded the surgery boy to allow him to amputate his leg, and how the operator lost his head when the tourniquet gave way, and but for the intervention of a cooler-headed friend with a door key the unfortunate patient would have bled to death. Another extraordinary case which he described at length was one in which an artist sought relief from the deformity of "bow-shins," and the surgeon, the patient, and the patient's father took turns at scraping away the bone with a "rongee." Unfortunately the granulations produced much new bone and the deformity became worse than ever. Then the surgeon, not to be beaten, applied arsenic freely. The result was exfoliation of bone and arsenical paralysis. After recovering from this, the patient sought Sir Astley's advice and showed him "a large box in which the exfoliated portions of bone were contained." Yet he considered that the improvement attained was worth all that he had gone through. The reader of the present day cannot fail to be struck by the fortitude of patients who submitted

themselves to prolonged operations without anaesthetics, and by the enterprise and manual skill of the operators. The ordeal was severe and it is not surprising to learn that often a week passed without any operation at one or more of the great hospitals. We find, for instance, that there were no operations at Guy's, St. Thomas's, and the Middlesex Hospitals in the last week of 1823.

Bleeding was still in full vogue. Every insensible person and everyone having any symptom of inflammation or fever was in danger of phlebotomy. Nobody questioned its efficacy. In the *Pickwick Papers* we read of how when the rival Eatanswill journalists were engaged in violent personal strife, "Ben Allen and Bob Sawyer had done nothing but dodge round the group, each with a tortoiseshell lancet in his hand ready to bleed the first man stunned." Also, when Mr. Winkle fell upon the ice, Mr. Allen strongly urged him to allow himself to be bled. Sir Astley Cooper, in his lectures on injuries of the head, advised bleeding, although he warned his pupils against it in case of concussion, when the pulse was feeble or slow. In the *Lancet* is described the case of a woman who had been run over and crushed. She had a ruptured liver and the usual profuse internal haemorrhage. Yet the apothecary who was called to the case bled her. A few years later we find a note about a man with a severe scalp wound who had lost a lot of blood. He was bled at once to the amount of eighteen ounces. But he recovered nevertheless.

The editorial articles of the *Lancet* bristled with personalities, and most of those who were denounced were labelled with nicknames which to-day seem somewhat puerile. The members of the staffs of hospitals were generally called "Bats," and any mistakes that they made were shown up in articles with such headings as "Blunders by Bats."

Travers of St. Thomas's was accused of having "haggled through the limb" in amputating below the knee. The patient was reported to have said to the operator, "I think, Sir, your tools are blunt!" Rival medical journalists also came in for abuse, especially Roderick Macleod of the *Medical and Physical Review* and James Johnstone of the *Medico-Chirurgical Review*. Macleod was later physician to St. George's Hospital and quite a worthy person, but he was referred to in the *Lancet* by many rude names, such as "Charity Roderick," "Blundering Blockhead," "The Yellow Goth," and his paper was called "The Yellow Fungus" and "The Excrescence," and the question was asked, "Was the editor of the Excrescence drunk when he perused or wrote this sentence?" He was accused of being a literary hack and the hireling of a bookseller in the following passage:

> "This glandered, foundered spavined old hack is now we hear in the stables of Mr. Orme who deeply laments his purchase, as it has been attended with a very heavy loss, and it is not likely that he will obtain even a sixpence for the animal's punctured hide. It is expected that the wretched creature will not survive long, as he is in an exceedingly weak and tottering condition; and from castigations received in consequence of his former bad habits, there remain several *old sores*, from which issues a horridly fetid periodical discharge, of a dirty green colour." (An allusion apparently to the colour of the cover of the journal.) "Although *scanty* this discharge is so offensive, that the House of Longman and Co. has become notorious for its ill odour, and the only animals which now cheer the old hack by their presence are a few of the most ghastly and filthy of the Hospital Bats. Where the carrion is there will the crows be also."

After this elegant extract it will not be necessary to quote what was said of Johnstone, of Sir Anthony Carlisle, of Guthrie, Earle, Stanley, Sir William Blizard, or Sir Benjamin Brodie. All or nearly all had opprobrious nicknames, and in attacks upon the nepotism then rampant Sir Astley Cooper's nephews came in for many hard knocks. Bransby Cooper suffered most, and much more than he deserved. The libel action which he instituted was one of ten actions which were brought against the *Lancet* or its editor in the first ten years of its existence. Six of these were for libel, in which £8,000 in all was claimed and only £155 0s. 0½d. was awarded in damages.

In a few years the *Lancet* had sown its wild oats and settled down into its respectable and beneficent course, but in 1839 the *Medical Times* appeared and was nearly as abusive as the early *Lancets*. Much of its abuse was directed against Wakley, to whom was allotted the part of Peachum in a parody of the *Beggar's Opera*, but these personalities did him no harm and he wisely disregarded them, except in one remarkable instance. His successful libel actions against the editor of this paper in later years had to do with other attacks upon him.

After the *Medical Times* had mended its manners and had become the reputable paper which it remained until its end in the eighties, the medical press ceased to have this particular kind of attraction for the student of manners and of the humours of medical life. Whether physicians and surgeons have become a less irritable genus or no, at least they do not show their annoyance in the unmistakable way which was usual a century ago, and the change is all for the better.

THE HEALTH OF ABERDEEN.

WHAT must be, so far as we know, a new departure is the issue, not of an annual report, but of one covering a period of six years, by Professor Matthew Hay, as medical officer of health for Aberdeen. The six years are 1916 to 1921 inclusive, and the vital statistics have the advantage of being based on the census of 1921. The census population of 159,915 was less than had been assumed, and rates now calculated on it are correspondingly higher.

Housing in Aberdeen, in respect of the number of rooms in dwellings, is better than in the other three great towns of Scotland. Only 44 per 1,000 of its population live in one-roomed houses, as against 47 in Edinburgh, 89 in Dundee, and 128 in Glasgow. For two-roomed houses the corresponding figures are—Aberdeen 326, Edinburgh 329, Glasgow 498, and Dundee 508. Aberdeen is also better than the others in respect of the average number of persons per room in the smaller houses, Glasgow being the worst. In 1921 the birth rate in Aberdeen was 26.6 per 1,000, as against a mean of 21.5 in the five previous years. Illegitimate births were 9.2 per cent. of the total births in 1921—a lower figure than in any of the five preceding years. The death rate, 14.3 per 1,000, was also lower than the mean of the previous lustrum (15.1). The infant death rate per 1,000 births was 108, as against the previous five years' mean of 127, so that here there has been a very decided improvement, though, of course, the cool weather of 1921 made it a favourable year. Professor Hay's statistical tables contain many interesting figures; Table VI, for example, shows the survivors at the end of the first year of life as a proportion of the total population. In 1921 they were 23.7 per 1,000, against an average of 18.9 in the lustrum 1916-20. From 1861-70 to the end of 1921 the percentage fall in the death rate at different age periods has been as follows: 0 to 5 years, 45 per cent.; 5 to 15 years, 68 per cent.; 15 to 25 years, 63 per cent.; 25 to 45 years, 54 per cent.; 45 to 65 years, 28 per cent.; and 65 years upwards, 13 per cent. All periods of life therefore have shared in the improvement. In comparing the birth, death, and marriage rates of the great towns of Scotland, Professor Hay introduces a new feature by including Paisley, with 85,000 population, and Greenock, with 81,000, in the comparison. The additional figures are useful, though the rates do not differ in any very striking fashion from the others, excepting that malignant diseases seem less prevalent than in the larger towns, the difference between Paisley's rate of 10.4 and Dundee's 17.2 being notable. Illegitimate birth rates are also comparatively low in Paisley and Greenock.

The report contains a chronological survey of the six years.

Acute poliomyelitis prevailed in 1916, there being 79 cases. The type was mild, the fatality rate being 5 per cent. (cases under one year old). In New York in the same year it was 24 per cent. The outbreak resembled epidemic meningitis in its distribution and transmission. The cases occurred in all parts of the city, and in houses above the average of cleanliness. In only a very few instances could any connexion be found between case and case. For the 75 cases that recovered with paralysis clinics were arranged. The cases were kept under observation for five years, and 54 completely recovered, whilst the remaining 21 are steadily improving.

Typhoid fever became epidemic in 1918, when there were 97 cases due to milk infection from a country dairy farm. The originating case had been regarded as influenza, but the typhoid bacillus was found in the faeces and typhoid agglutinins in the blood. The later cases were in contacts, and not due directly to milk. In 1

families there were multiple cases, one family having six. Of the 97 cases 14 died. Typhoid inoculation was done in all inmates of infected houses, beginning early in September (the epidemic having started in August), and among the contacts only one case developed, the disease having been incubating before the inoculation.

Small-pox broke out in 1918. There were eight cases, all ending in recovery. Vaccination of contacts was extensively carried out.

Influenza.—The epidemic of 1918-19 was extensive and fatal, reaching its acme in October, 1918. In the six epidemic months 460 deaths could be attributed to influenza, making deduction for pneumonia, etc. The age period 25-45 suffered most. The disease came in two main waves—October-November, 1918, and February-March, 1919. Preventive efforts followed the usual lines, but Professor Hay concludes that "any adequate control of epidemic influenza awaits the production of a specific prophylaxis."

Epidemic Milk-borne Bacillary Dysentery.—Professor Hay gives an account of an epidemic of this disease in a manner practicable only in a university town, with every facility for skilled clinical, bacteriological, and pathological investigation. The following are the conclusions reached: "An epidemic of diarrhoea or gastro-enteritis occurring in Aberdeen in 1919, and causing over 1,000 cases and 72 deaths, has been proved to be due to infection of milk with dysentery bacilli of the Flexner type. Similar epidemics of milk-borne diarrhoea have occurred formerly, but bacteriological investigation had failed to determine the nature of the infecting organism. Reference to the epidemiological and clinical features of such former epidemics, however, makes it practically certain that they were essentially of the same description as the Aberdeen epidemic of 1919, and accordingly indicates that they were likewise due to infection of milk with dysentery group bacilli. The Aberdeen epidemic of milk-borne bacillary dysentery had run its course and had caused 72 deaths before serological proof of bacillary dysentery was available. Since the time of the Aberdeen investigation, notable advances have been made in methods for the bacteriological diagnosis of the dysenteries as a result of the fundamental work of F. W. Andrewes, A. D. Gardner, C. J. Martin, and others. Nevertheless, modern methods of bacteriological diagnosis are not infallible, and the Aberdeen experience clearly indicates that deaths will be prevented if polyvalent antidysenteric serum and saline treatment are exhibited at once in a disease having the clinical symptoms of bacillary dysentery or in an acute enteritis from which has been isolated organisms with the cultural reactions of the dysentery group bacilli."

Meat Poisoning: Enteritis.—Two other outbreaks of less extent and severity—one of meat poisoning and one of enteritis in the Aberdeen City Fever Hospital—are reported.

Mother and Child Welfare Service.

The development of this service is traced from the time when the first woman sanitary inspector was appointed twenty years ago, and there is reproduced a report of Professor Hay's which was published by the Carnegie Trust on the training of health visitors. At present the standard of the Board of Health—one visitor for each 400 births—is complied with in Aberdeen, but the opinion is expressed that, however efficient such visitors may be, they are unlikely to take entirely the place of voluntary workers. The official scheme for maternity and child welfare adopted by the town council in 1918 is very complete, whilst the organization required is set forth in detail, and the work of the midwives in successive years.

Tuberculosis.

In the county of Aberdeen, as distinguished from the city, wooden shelters at the homes of the patients are used, whilst in other adjoining counties many cases are sent to sanatoriums outside their own boundaries. The Aberdeen City Hospital plays a large part in the city's own scheme. Being within easy distance of their homes, parents are willing to let their children remain for the time necessary to secure satisfactory results, which are in fact achieved, whilst visitors to the patients have the constant lesson

"of the obvious benefits to be derived from living and sleeping virtually in the open air throughout the whole day and night, and during the whole year, either in open shelters or in wards with windows so widely open that it is impossible perceptibly to raise the ward temperature even by steam heating." Also he holds that "With a view to the continuous and full observation and study of the progress of the individual cases and of the effects of treatment, there is definite advantage in having practically the cases in all stages under single medical control or direction, as we have at present in the tuberculosis wards of the City Hospital."

The views expressed with regard to occupational training coincide with those of Sir George Newman. Professor Hay writes:

"As a rule, the retraining of a consumptive in a fresh occupation—often an outdoor occupation as opposed to a previous indoor one—has not proved so successful as was originally anticipated by many. It is usually better that a consumptive should return to his original occupation, provided it can be carried on under healthy conditions. The occupation of itself is less seldom unhealthy than its conditions. Thus, an ex-sanatorium shoemaker or tailor working at his original trade in an open shed or workshop, although within a city, has probably as good a chance of keeping well as if he had changed his occupation to gardening, and he has the advantage of being able to live at home, and of being usually able to earn considerably more than in a new occupation, and thus to keep himself better fed."

There is a great scheme in hand for setting apart an area of about 100 acres for all the important curative institutions of Aberdeen, excepting, perhaps, the infectious diseases hospital. It would include the Children's Hospital and a new Royal Infirmary. The proposal, if carried into effect, would manifestly be of great value to the medical school of the University as well as to the general community. Professor Hay's discussion of the question of venereal diseases services is on broad and sagacious lines, in respect both of Aberdeen city and of the north-eastern counties of Scotland. He prints the joint scheme he submitted; it received the approval of the central authority in 1919 and is now in operation.

COMPRESSION OF THE SPINAL CORD.

At the fourth Réunion Neurologique Internationale held at Paris in June, the subject of compression of the spinal cord was discussed by representatives from many countries as well as by the members of the Paris Neurological Society.[1] The discussion was directed to three aspects of the problem: (1) the diagnosis of the site and nature of the compression; (2) the means whereby it produced symptoms; and (3) its treatment.

The discussion was opened by Sir James Purves-Stewart and Dr. Riddoch, who represented British neurology. It has been known since the first successful operation for spinal tumour performed by Sir Victor Horsley in 1888 that after the removal of the compressing agent the cord might regain all or almost all the function which had been lost. Purves-Stewart and Riddoch sought to explain this in the light of our knowledge of the anatomy and physiology of the cord. They maintained that, whereas certain of the symptoms of spinal compression were due to the direct pressure on the spinal cord by the tumour, the majority could be attributed to the effects of compression of the blood vessels in the part of the cord underlying the tumour. In this way relative anaemia was produced in these segments of the cord with temporary loss of conductivity in the nerve tracts which passed through them. In addition, the compression of the longitudinal veins at the level of the tumour caused venous stasis and anoxaemia in the lower segments of the cord, a condition which might exaggerate the loss or perversion of function in these segments.

Dr. Charles Foix of Paris, who dealt with diagnosis and localization, expressed the opinion that the most important localizing symptoms were the pains caused by the compression of a spinal root; the pains were usually almost continuous, but there were paroxysmal exacerbations which might be brought on by movement or by coughing; sometimes the patients felt a constriction like that of a tight band. These root pains were often the earliest sign of a tumour and were a very trustworthy guide to its site. Next in importance came localized muscular atrophy, which, especially if it occurred in the arms or shoulder girdle, might of itself reveal the level of the tumour. Loss of skin sensibility was of less certain value, unless there were a definite upper limit to the anaesthesia; usually, however, it appeared late. Loss of individual reflexes, whether superficial or deep, or a band of hyperaesthesia might be of considerable localizing value. Lumbar puncture usually settled any doubt as to the presence or absence of compression of the cord. When compression was present the spinal fluid became highly albuminous, and in some cases might also show xanthochromia and coagulate massively—the syndrome of Froin. Puncture at various levels of the spine had revealed the level of the tumour, as above this level the spinal fluid was much more normal in character than below.

Ayer has combined cisternal puncture with lumbar puncture, and by a comparison of the pressure as well as of the chemical composition of the fluids drawn from these two

situations has determined the presence of spinal compression. In a recent paper Cushing and Ayer[2] have shown the value of comparative pressure readings in five tumours of the cauda equina, in which the lumbar fluid taken from *above* the level of the tumour was highly albuminous, a finding which taken alone might have suggested that the tumour was at a higher level.

Still more valuable is Sicard's method of injecting lipiodol into the cisterna magna, and determining by *x* rays the level to which it spreads down in the subarachnoid space. This formed the subject of a demonstration by Mr. Percy Sargent at the Portsmouth meeting of the British Medical Association, at which he showed the possibility of establishing not only the site but also the extent of the tumour, by introducing lipiodol both by cisternal and by lumbar puncture. An account of his demonstration, illustrated by some excellent skiagrams, was published in a recent issue.[3]

The mechanism by which tumours reach and attack the cord was dealt with by Beriel of Lyons, who has recently published a series of articles on the subject.[4] In some cases neuro-fibromata appear to spread up the nerves from the periphery and to form either a large mass on a nerve root or a diffuse infiltration of the soft meninges; sometimes they actually invade the spinal cord. Being tumours of nerve substance they produce less damage to the function of the nerves or nerve roots than their size would suggest, and they often infiltrate the spinal root ganglia without giving rise to any root pains. In many cases the first symptoms attributable to them are those of compression of the spinal cord. Secondary carcinomata and sarcomata of the spinal bones, on the other hand, rarely pass through the dura mater, although they may produce a thickening on the inner surface of this membrane. Usually their effects are caused by pressure on the cord, and diminution of the blood supply to it. Occasionally spontaneous fracture-dislocation of the spine, due to its erosion by cancer or sarcoma, produces sudden and severe paraplegia.

The surgical treatment of spinal compression by laminectomy was dealt with by MM. de Martel and Robineau, and Beriel and Wertheimer. They all insisted that the operation should be done with the greatest care, and, in particular, that the cerebro-spinal fluid should be allowed to escape very slowly; rapid escape of the fluid or manipulation of the cord or of the roots caused rapid lowering of the blood pressure. Ether was the anaesthetic of choice. Finally, M. Béclère spoke of the treatment of spinal tumours by radiotherapy, and MM. Belot and Tournay recorded a case of spinal compression by tumour which appeared to have been completely cured by *x* rays, for the patient was able to walk as well as before. Many other cases of spinal tumour cured by surgical means were shown, and the meeting inspired the hope that, with the new and more exact methods of diagnosis and localization, the brilliant results which may follow the early eradication of spinal tumours will become increasingly common.

REFERENCE.

[1] *Revue Neurologique*, June, 1923, T. xxx, No. 6, pp. 561-730. [2] Cushing, H., and Ayer, J. B.: *Archives of Neurology and Psychiatry*, August, 1923, vol. x, p. 167. [3] Sargent, P.: British Medical Journal, August 4th, 1923, p. 174. [4] Beriel and others: *Lyon chirurgical*, T. xx, No. 2, p. 129.

THE BACTERIOLOGY OF PNEUMONIA.

In a report on the bacteriology of pneumonia,[1] recently issued by the Medical Research Council, Professor Ernest Glynn and his colleagues point out that the returns of the Registrar-General show that while the fatality of many other infective diseases has greatly fallen during the past few decades, the number of deaths to be ascribed to pneumonia in one or other of its forms is still relatively high and shows little or no diminution. The present report is an attempt to shed a little fresh light upon the etiology and pathology of pneumonia by studying (1) 140 cases and 50 acute empyemata chiefly bacteriologically, but also clinically; (2) salivas from 25 normal persons bacteriologically; (3) 41 miscellaneous pneumococcal and streptococcal infections. The report also contains a considerable list of references to recent work on this subject.

In 90.7 of the cases of pneumonia examined by Professor Glynn and his colleagues the pneumococcus was found to be present. For isolating this organism from sputum or saliva mouse inoculation was superior to other methods. Lung puncture was found to be a safe and valuable aid to bacteriological diagnosis; 14 out of 31 cultures of lung juice obtained in this way were positive in case of adults, and 8 out of 13 in the case of children. The probability of finding pneumococci in the lung juice increased with their abundance in the sputum, or their presence in the blood. Pneumococci were successfully cultivated from the blood in about 45 per cent. of the cases of acute pneumococcal pneumonia examined from the third to the seventh day inclusive; it is significant that the mortality among the positive cases was 71.4 per cent. as compared with 8.3 per cent. in the negatives.

With regard to the differentiation of the pneumococcus from other organisms, stress is laid on the characteristic appearance of its colonies when viewed with a hand lens or under a low power of the microscope. As a rule the bile solubility test was of great differential value, but about 5 per cent. of the pneumococci were found to be either insoluble or but partially soluble in bile. The fermentation of inulin was of little diagnostic value, since only 18 per cent. of the Type I and Type II pneumococci examined gave a positive result, and about 14 per cent. of salivary streptococci were found to ferment inulin. When cultivated in the presence of blood, over 90 per cent. of the pneumococci produced methaemoglobin.

Of some 852 strains of pneumococcus-like organisms investigated, 2.7 per cent. were found to be intermediate between the pneumococcus and streptococcus. Pneumococcus strains conforming to one or other of the three defined types of that organism were usually more virulent to mice than other pneumococci. The Rockefeller agglutinating serums were of great value in identifying specimens of the various types of pneumococcus; direct typing from the peritoneal fluid of the mouse was successful in 68.8 per cent. of the cases, but in the rest the peritoneal fluid had to be subcultured before typing could be successfully performed.

A careful study was made of bacteria other than pneumococci present in the cases including streptococci, staphylococci, Gram-negative cocci, and *B. influenzae*. In ten cases streptococci were regarded as the probable causal agent. Haemolytic streptococci were only encountered in three cases; the others yielded non-haemolytic streptococci chiefly of the *salivarius* class which the authors consider to be of pathogenic significance in such cases, although usually such salivary streptococci are of no pathogenic importance. Only a single case of influenzal bronchopneumonia was met with; and in another the meningococcus was the probable cause.

A special feature of this report is the attempt which is made to correlate the clinical features of the cases with the bacteriological finding. It is suggested that the primary lobular pneumonia of children described by West is usually a Type I infection of *exogenous* origin; while his broncho- or catarrhal-pneumonia is usually either a Group IV infection of *autogenous* origin, or a streptococcal infection, as it often follows measles, whooping-cough, etc.

The few cases—six in all—in which the therapeutic value of Type I serum was investigated clinically gave an encouraging result, but most of those who have tried this treatment will agree with Professor Glynn and his colleagues that this serum is not likely to come into general use until it is sufficiently potent to be administered subcutaneously. Apart from the inconvenience of the intravenous route at present advocated, the large bulk of serum that it is necessary to inject is another very serious drawback to its general application. That serum of increased potency, or some other method of raising the patient's specific resistance, is urgently needed will be realized when it is stated that Professor Glynn estimates that during 1919 no less than 8,000 persons died in this country of pneumonia brought about by Type I pneumococcus—about twice the number that succumbed to diphtheria over the same period. The report gives full details of a vast amount of careful work, and is a valuable contribution to a subject of increasing importance.

[1] *Bacteriological and Clinical Observations on Pneumonia and Empyemata, with special reference to the Pneumococcus and to Serum Treatment.* By Ernest E. Glynn, M.A., M.D., F.R.C.P., and Lettice Digby, F.R.M.S., assisted by H. Wallace Jones, M.D. 1923. Medical Research Council Special Report Series No. 79.

British Medical Journal.

SATURDAY, OCTOBER 6TH, 1923.

THE CENTENARY OF THE "LANCET."

OUR contemporary the *Lancet* has celebrated its hundredth birthday by issuing a supplement which, while it describes the rise and progress of the paper, is also a very valuable contribution to the history of medical journalism in this country. For although long before its first appearance there were monthly and quarterly medical periodicals, yet however weighty their scientific contributions might have been they were of small influence, and after that time the weekly journals quickly became the only ones that counted in the world of medical politics. The *Lancet* to-day, unlike human centenarians, shows no sign of senile decay, but is still full of vigour.

When what was then a humble little octavo first appeared it is not probable that anyone—even its editor—foresaw that it would soon become a power in the land, and incidentally that it would prove to be a very valuable property for its originator. A weekly medical journal was a startling innovation; its unrestrained criticism of important personages and of existing medical institutions, and its advocacy of reform couched in strong language attracted wide notice. It was read by medical reformers and by medical reactionaries as well as by many of the general public. Indeed, that his journal should serve as a liaison between the profession and the lay public was one of the avowed objects of the founder. It would be idle to deny that in its youthful days it was often scurrilous and sometimes unfair in its criticisms and comments, and some specimens of Wakley's bludgeonings are given at page 616. We can, however, recognize that Wakley's prime motives were good, though his methods were often reprehensible. Wakley's abounding energy and fearlessness, together with his fine physique, must have made him an engaging personality, and this impression is confirmed by the charming sketch by Sir Edwin Landseer; a reproduction of it in colours forms part of the centenary supplement, an advance copy of which we have by the courtesy of the Editor been permitted to see. Wakley was an effective writer, and soon surrounded himself with a small group of brilliant assistants, some of whom, such as Wardrop and Lawrence, attained afterwards to professional fame. Many enemies were made in the fight for the reform of the Corporations and of the great hospitals and schools, but in time they were won over. A striking proof of the reconciliation which had taken place between Wakley and those whom he had most bitterly assailed was afforded in 1849, when a malicious action was brought against his son, Mr. T. H. Wakley, at that time a young surgeon on the staff of the Royal Free Hospital. All the surgeons who came forward to give evidence in favour of the defendant had been most severely handled in the early volumes of the *Lancet*, and among them was Mr. Bransby Cooper, who had suffered under a most cruel and not quite fair attack one-and-twenty years earlier.

The actions at law which poured in upon the plain-speaking and undaunted editor, if not decided in his favour, were treated as moral victories, and the award of a fraction of the damages claimed did not deter him from repeating his accusations at the earliest opportunity. As time went on, however, he seems to have realized that violence of language and overstatement of facts alienated the sympathies of a number of people whose support was the best worth having, and after the first ten years or so there was a great change in the controversial manners of the journal. Nevertheless there was no slackening in the demand for reform of all the abuses which had been so long complained of. Meanwhile the *Lancet* and its representatives were at first tolerated and afterwards welcomed in the hospitals and medical schools.

For the first sixteen years of its existence the *Lancet* alone gave articulate expression to the feelings and wishes of the majority of the profession, and for another ten years only one paper attempted to dispute its possession of the field. After the rise to importance of the British Medical Association, however, it was natural and indeed inevitable that its official organ should represent the interests of its members, and take upon itself a portion of the duties which formerly had fallen to the lot of the *Lancet;* but the two journals have worked side by side for the common good, and despite occasional bygone personal differences, which are referred to in the centenary supplement, there has never been other than friendly rivalry between them.

In the year 1844 the page of the *Lancet* was enlarged, and the selection and arrangement of the subjects dealt with had become much the same as at the present day. It is worthy of remark that this has become almost the standard pattern for weekly medical journals in the British Empire, America, Germany, and to some extent in France. Soon after the paper had made its name a French paper paid it the compliment—not relished by Wakley—of calling itself *La Lancette Française*. Other papers with analogous names have followed in various parts of the world, so that while the surgical instrument from which it is named is almost obsolete, the name is perpetuated by the periodical.

Perhaps the *Lancet's* greatest political success was the appointment of Warburton's parliamentary committee of inquiry into the state of the medical profession in the year 1834, when conclusive evidence of the necessity for reform was extracted from the very men who had for ten years been strenuously opposing the paper's demands for it. It is true that legislation did not immediately follow, but the ground was cleared and the seed sown which later germinated, and, nurtured by the British Medical Association, grew into the first Medical Act. The exposure of the miscarriages of justice which had occurred owing to the want of medical knowledge and consequent failure to appreciate the value of medical evidence by coroners, and the advocacy of the appointment of medical men to that ancient judicial office, did not bear fruit in legislation, but it and the example set by Wakley as coroner for Middlesex led to a great reform in practice.

The *Lancet* has had its ups and downs, as a reference to the centenary supplement will show, and it did not keep its hard-won popularity with hospital surgeons altogether without interruption. Moreover, as in our own case, in the crusade against quackery its action was not always upheld by unsympathetic judges and juries, and sometimes damages had to be paid for doing what was considered to be a public duty. The founder of the paper originally dedicated it to the service of the medical profession, and only indirectly to that of the public; but in its later years, and especially under its second editor, valuable services

were rendered to the public directly, in the extensive inquiries which were made into such subjects as the adulteration of food, nursing in workhouses, and the cholera epidemics on the Continent. In each of these and in others the *Lancet* stepped into the place which should have been occupied by a public authority, and the very valuable work which was done served still further to increase the respect in which the paper was held by the lay public. For even the most frenzied antivivisector or antivaccinator could not detect in these activities any possibility of the grinding of a medical axe.

The retrospect of one hundred years takes in a wonderful period in which the transformation in surgical practice was at least as startling as that made in other branches of knowledge and in industry. It includes the whole of the Victorian age, at which it is just now the fashion to sneer, but which to many of us seems in many respects the greatest in our history. Looking back now from the vantage point of a century, there does not seem so very much difference between the surgery of Astley Cooper and that of Ambroise Paré, yet the author of an historical retrospect in 1824 confidently stated that "Surgery, operative surgery, has now nearly achieved all that can be expected from it." So many advances have been made in our time that we expect more of the future than did the writer in the *London Medical and Physical Journal*, and putting all that anaesthesia, antiseptic and aseptic surgery, and radiology have done on the credit side, we are not so confident of finality now as our forefathers were in the days when the great Sir Astley performed minor operations in his consulting room with the assistance of his footman, did not invariably remember to wash his hands between operations, and received the Prince Regent with blood-stained shirt-collar and cuffs. Imagination boggles at the attempt to realize what a prolonged major operation, such as a difficult lithotomy, then meant to the unfortunate patient of any class in society, and it is fortunate for us if we cannot conceive what were the sufferings of a patient submitted to operation in a public hospital, before death put an end to them, as it so often did.

The fortunes of innovations and improvements in surgery and medicine may be followed week by week in the pages of the *Lancet*, some quickly and widely accepted and some stubbornly opposed by the many and only advocated by the enlightened few, until the logic of facts carried conviction to all. We may also see some inventions, such as phrenology, extolled by many besides the editor of the *Lancet*, only to fade into insignificance as time proved their worthlessness.

Our contemporary has been fortunate in having as its editors the three generations of the family of Wakley, and the present occupant of the editorial chair, Sir Squire Sprigge, to whose practised pen we think that we may venture to attribute this masterly summary of the activities of a century which ought to find a place on the bookshelves of every medical practitioner. There is no other man living so well qualified for this task as the author of the *Life and Times of Thomas Wakley*, who has himself been a member of the staff of the paper for over thirty years and for fifteen years its editor. Fortunate it has also been in the groups of distinguished assistants whom its editors have from time to time chosen to assist and advise them. Their names are recorded in the supplement, and a consideration of them shows that with such support the *Lancet* must have deserved the success to which it attained.

THE USE AND ABUSE OF OBSTETRIC FORCEPS.

The Annual Meeting of the British Medical Association in Portsmouth was the occasion of many interesting and important discussions, but perhaps none is calculated to interest a wider section of the profession than that on the use and abuse of obstetric forceps, which was introduced by Mr. Comyns Berkeley and Dr. J. S. Fairbairn, both well known teachers of midwifery and gynaecology. In dealing with the "abusive" side of his subject Mr. Comyns Berkeley dealt as faithfully with his colleagues in the teaching schools of this country as with the practitioners, and neither the one section of the profession nor the other can justifiably resent his criticism, although they may not all entirely agree with his views. We mention this particularly, because a querulous note did appear to find its way into the discussion, and some of the general practitioners in his audience seemed inclined to resent what they deemed a slighting judgement. A calm perusal of what Mr. Comyns Berkeley actually said will, we are confident, extinguish any such feeling wherever it may have been generated, and for ourselves we welcome the opportunity provided by the publication of his paper to record our cordial appreciation of his public spirit in calling attention to what he believes to be bad in the teaching and in the practice of present-day midwifery. It is quite true that to do this is no less than the duty of the specialist in any subject—a duty owed alike to the public, to his colleagues in the profession, and to his own conscience. But at the same time it always takes courage to make such an indictment in public; and in the present instance this is particularly the case, because there is no aspect of his work about which the general practitioner is more sensitive of criticism than his midwifery. A shrewd element of truth lurks in the epigrammatic statement of an eminent obstetrician, now retired, that "every practitioner regards himself as a specialist in midwifery." It is merely one way of stating the obvious fact that in midwifery the general practitioner does, and is expected by the general public to tackle single-handed emergencies and difficult operative deliveries, the equivalent of which in general surgery or in medicine would appear both to him and to his patients to call unequivocally for the specialist's services in private or in hospital.

Such is the prevalence of the use of forceps in midwifery to-day, and so wide is the range of conditions which, justifiably or unjustifiably, may be claimed as indications for the operation, that a discussion on the subject is bound to be discursive and to range over almost the whole subject of practical midwifery. The root causes of the abuse of forceps are to a large extent the same as the causes of bad midwifery in general, and of the persistent puerperal mortality from which we suffer. They are to be traced not only to the imperfections of teaching, the lack of ante-natal care, and the lack of skill or judgement on the part of an individual practitioner; they are entangled with the economic aspect of midwifery amongst the industrial and poorer sections of the populace, and with the ignorance on the part of the public as to the conditions necessary for the safe delivery of a woman. We are rather surprised that more emphasis has not been laid upon the economic aspect of the case. For no part of his work is the practitioner less adequately paid than for his midwifery, and it is surely no reflection upon the profession to suggest that if more appropriate fees were forthcoming more time and attention would be

given to confinements. Inadequate remuneration for work done under pressure of circumstances is very apt to spell haste, while haste in midwifery generally means meddlesome and unnecessary interference, with all its disastrous train of sequels.

Mr. Berkeley opened his paper by drawing attention to the lack of efficient teaching on such practical points as the proper method of application of obstetric forceps, and pointed out that in the last resort the responsibility for this inefficient teaching rested upon the General Medical Council, and still more upon the various examining bodies, which did not insist upon certificates of really adequate practical teaching. It would be laughable were it not so tragic to consider the elaborate care which is taken to teach students the technique of surgical operations which most of them will never have occasion to perform, while the technique of such obstetric operations as the application of forceps, which any one of them may quite possibly be called upon to perform within twenty-four hours of going into practice, is left to be picked up at his own will and from the teaching of a house-surgeon or junior assistant. Many practitioners must have had the experience of having to face an abnormal maternity case very early in their professional careers, and must have vivid recollections of the sense of futility and unpreparedness which then possessed them. If it be true—and all the indications point to its being so—that the main difficulty in the teaching of obstetrics is that of obtaining sufficient clinical material, then that is another very strong argument for the increase in the number of maternity hospitals throughout the country.

Mr. Berkeley next discussed the more common mistakes in connexion with the actual technique of the operation. These have been dealt with again and again, and must continue to be reiterated until, as a result of better and more practical teaching, both of the public and of the profession, conditions improve and correct technique becomes instinctive. He pointed out the value of exact knowledge of the mechanism of labour, and explained how the application of forceps could very easily interfere with this normal mechanism unless proper skill and care are exercised. In regard to the actual indications for the use of forceps he emphasized the opinion that they should be used to anticipate danger to the mother or child, and not when one or other is already in danger. Before using the obstetric forceps the relative sizes of the pelvis and the head, the condition of the genital canal, the strength of the uterine contractions, and the state of the child should all be ascertained. If this were actually done and the treatment based upon the results of such an examination, the application of forceps would undoubtedly be much less frequent than it is. The legitimate and proper use of obstetric forceps is one of the most beneficial operations known; their indiscriminate use is to be deprecated from every point of view.

Mr. Comyns Berkeley then went on to discuss delayed labour, which is perhaps the most common indication alleged for the operation, and pointed out, what is so often forgotten, that in the absence of such complications as haemorrhage a lingering first stage never does any harm either to the mother or to the child; even a lingering second stage, so long as the pains are not failing or becoming continuous, is less harmful than a rapid delivery with forceps. It may be taken as an axiom that delay in labour is, *per se*, seldom a cause of danger. The relatives and friends of the patient, however, think otherwise, and many a man has been hustled into the premature application of forceps or the adoption of some other method of rapid delivery against his own better judgement simply because he had not the courage and confidence to withstand the moral pressure of the anxious relatives. It is another great advantage of hospitals and nursing homes that they leave the judgement of the medical attendant untrammelled by distracting considerations of a more or less domestic or personal nature. In connexion with moderate degrees of contraction of the pelvis, Mr. Berkeley referred to Munro Kerr's statistics, which, amongst others, have shown so clearly the enormous value of leaving the labour to Nature. Eighty per cent. of borderline cases of disproportion end spontaneously when left to Nature. This is a statement which cannot be over-emphasized. The value of head moulding is not sufficiently appreciated. In how many cases, when a practitioner knows that he has to deal with a case of slight contraction of the pelvis, and thinks that in all probability forceps will ultimately have to be applied, does he proceed to apply forceps forthwith, in order "to get the case over," instead of giving the patient as long as possible to obtain the full benefits of moulding? No treatment could be more mistaken. Cases of difficulty not too great to be overcome by Nature should be left longer in the second stage, provided the general condition of both patients is satisfactory, than cases in which there is no special element of difficulty.

Dr. Fairbairn's contribution to the discussion was characteristically thought-stimulating. He laid emphasis mainly upon the importance of ante-natal care so that the condition of the patient and the circumstances of the confinement generally should be as favourable as possible. His paper is full of suggestive hints which will well repay perusal.

Of the details of the discussion itself it is not our intention to write. But we believe that there is no specialist in obstetrics who would not support Mr. Comyns Berkeley's main contentions whole-heartedly. As a protagonist in a debate Mr. Berkeley naturally stated his case as emphatically as the facts of his experience warranted. It should be remembered that the experience of a hospital obstetrician, and more particularly of a hospital gynaecologist, gives him a very different outlook from that of the practitioner, who sees mostly just his own or his immediate neighbour's work. The specialist is able to have a very much wider outlook, but at the same time he of course sees mainly the bad results of practice. Yet the incontrovertible fact remains that nearly half the work of a gynaecological ward is due to bad midwifery, and it is probably true to say that more of the bad midwifery lies in the abuse of forceps than in any other single procedure. If all the obstetric forceps in the world were cast into the depths of the sea there would be less reparative gynaecology than there is now; but there would be a still more remarkable and praiseworthy reduction in the need for reparative operations if the forceps were retained in the obstetric armamentarium, but always used properly and only in accordance with suitable indications.

The keys to the solution of the problem are, first, ante-natal care. "Forewarned is forearmed," and nine labours are made difficult by lack of adequate foreknowledge for every one that is inherently and persistently difficult. This preventive aspect of obstetrics, which is the most satisfactory development of midwifery in our generation, was ably discussed in the second paper by Dr. Fairbairn. In the next place, there is the importance of hospital provision for all

parts of the country and all classes of the community. Nothing is more obviously a weakness of the present situation than that practitioners should be expected, and should indeed be compelled, to do obstetric operations in circumstances and surroundings that would paralyse the activity of a general surgeon. Thirdly, there is the importance of greater reliance on what Dr. Fairbairn called the " first line of defence "—the natural efforts—and the observance of " the test of labour " in all primigravidae. Fourthly, we would specify in particular that the forceps should never in any circumstances be applied until the cervix is fully dilated. We believe that if this one rule were observed strictly Mr. Berkeley's ground for complaint would be diminished almost to vanishing point. Never is brute force to be used. If it prove really necessary the case is not properly one for forceps delivery. Gone are the days when an obstetrician could afford to boast of the very small pelvis through which he had dragged a moribund infant. To be faced with the alternative of extracting such a child by brute force through a pelvis which is bound to be seriously bruised and lacerated or of performing craniotomy on the living child is often the fate of a practitioner in the country, or in urban districts where hospital facilities for the performance of Caesarean section are lacking. It sounds almost too idealistic to say that the time is surely coming when such a cruel dilemma will cease to present itself. But it is the case—provided we all religiously practise ante-natal examination and care, and preach the value of it to our patients and to the public, in season and out of season.

THE SCHOOL OF HYGIENE.

WE have more than once commented upon the lengthy incubation period, now amounting to six months, which has followed the decision to proceed to the appointment of a director of the new School of Hygiene. Our contemporary, the *Medical Officer*, in its issue of September 15th, expresses an astonishment, which we share, at the delay. Other opinions expressed by our contemporary are, we think, less well grounded. Its opinion that the director should be " a practical man with a knowledge of research, with a broad outlook on hygiene, with imagination, tact, discretion, and a wide experience of men and affairs," will certainly be endorsed by all; but the inference that " the best and most up-to-date sanitarian of the English public health service is the only possible appointment which can be made to ensure the success of the school and command the confidence and support of public health officers in this country and abroad " does not follow, and even suggests some confusion of ideas.

The object of the School of Hygiene is certainly not to provide instruction in the technique of public health administration, any more than the object of a university school of jurisprudence is to teach the practice of the courts. Many years ago, in a criticism of English legal education, Walter Bagehot said that " the training for judicial legislation should be one of jurisprudence in the highest sense—of the jurisprudence which Burke must have been thinking of when he called it the ' pride of the human intellect.' It must be a knowledge of the reasons which make laws good or bad, eligible or ineligible in given cases. But no one will contend that such knowledge is now taught ' in chambers,' nor is it possible that it should ever be taught there." Bagehot argued that the qualities which enable a lawyer to succeed in practice might be wholly alien to those requisite in the good teacher, and we think he would have been surprised to hear that a successful barrister or even a popular judge would, on that account, be a suitable source of inspiration for a school of jurisprudence.

These considerations are fully applicable to the case of the School of Hygiene. That its director should have something more than the general knowledge of research possessed by medical officers of health in common with other educated men, that he should have acquired the more intimate knowledge only to be gained by direct participation in some form of research and necessarily rarely possessed by men actively engaged in public health administration, are paramount qualifications. If there is any English medical officer of health who possesses these qualifications and is willing to undertake the duties of directorship, his claims to consideration are very great. But we deprecate strongly any emphasis of the " practical " aspects of the matter. A school of hygiene which professed to manufacture sanitary administrators would be as great a laughing-stock as a school of jurisprudence which attempted to manufacture legal practitioners. It is the business of a university to teach principles. Those who have been well grounded in principles will profit by the practice of the world of everyday life, and become sound practitioners.

The ideal director of a university school is a man of principles in that sense. That he happened to be by training a bacteriologist, a chemist, or indeed a research worker in any department of human knowledge whatsoever, should not operate as a disqualification. It is the personality of the man himself, his breadth of mind and ideals, which are all-important. That these high qualities are to be found in the ranks of the English public health service we are proud to think is certain, but we are equally confident that they are to be found in all the other branches of the medical profession.

FREE DISTRIBUTION OF INSULIN IN ONTARIO.

THE Provincial Board of Health of the Province of Ontario has issued a pamphlet[1] giving information regarding the free distribution of insulin in suitable cases of diabetes, arrangements having been made by the Board to supply insulin free to medical practitioners for patients in Ontario who are unable to pay for the drug themselves. It is emphasized in the pamphlet that the majority of patients suffering from diabetes do not require insulin, and can be better treated by dietetic measures alone, and, in order to determine the necessity for insulin, patients are whenever possible placed in a hospital for three weeks to determine the severity of the disease. In hospital it is advised that the following investigations should be carried out: estimation of the quantity of urine passed in twenty-four hours; examination of urine and quantitative determination of sugar in urine; blood sugar determinations. The patient should then be placed on a weighed maintenance diet calculated from the patient's basal metabolism rate, and examinations should be repeated daily to determine the power of carbohydrate utilization. Then, if insulin is required, the amount and the time of the dosage should be scientifically worked out. While in hospital the patient should be taught how to weigh and prepare his diet; how to examine his urine; the symptoms and danger signals of his disease; how to administer insulin to himself; and the symptoms and treatment of overdose of

[1] *Insulin: Information for Physicians regarding Free Distribution of Insulin in Suitable Cases of Diabetes.* Ontario: Provincial Board of Health.

insulin. Thereafter it is recommended that the patient should be returned to his home and placed under the supervision of his medical attendant as regards his diet and general treatment. Examination of the urine ought to be carried out daily to determine the presence of sugar, and, if sugar be present, a daily quantitative examination should be done. In cases progressing favourably a blood sugar estimation is needed at least once a month. It is emphasized that unless these preliminaries are carried out in the case of each patient the satisfactory treatment of diabetes with insulin is almost impossible, and is certainly attended with very great danger. Not all diabetics require insulin, and in some cases—for example, renal glycosuria—serious harm may follow its administration. The Ontario Board of Health disclaims all responsibility for accidents which may follow the administration of insulin; this matter is entirely in the hands of the medical practitioner himself, and he must take the responsibility for the individuals who receive the treatment and also for the amount of insulin given. The pamphlet goes on to describe the standardization of insulin, the method of administration (subcutaneously, not intramuscularly, nor too near the skin surface, usually about a quarter to half an hour before food), dietetic treatment in diabetes, the treatment of acidosis and of coma, the complications of diabetes, and the dangers in insulin treatment. In conclusion, a memorandum is set out for diabetics using insulin. Accurate adjustment of diet and insulin dosage, it is insisted, are essential for successful treatment. Excessive exercises or heavy work should be avoided. Hypoglycaemia is serious; the patient should remember the symptoms and cure, and always have carbohydrate in some form readily available. If the supply of insulin be exhausted the patient should decrease the diet by one-third, and rest; the former diet should be resumed when fresh insulin arrives. Enough insulin for one month should be ordered, as it will not deteriorate in that period.

THE GUILD OF ST. LUKE.

The annual service of the Guild of St. Luke, the Evangelist and Physician, will, by kind permission of the Dean, be held at St. Paul's Cathedral on St. Luke's Day, Thursday, October 18th, at 7 p.m. Seats will be reserved for medical practitioners and students, all of whom are invited to attend whether they are members of the guild or not. This annual service, coming as it does very shortly after the reopening of the medical schools, affords a timely opportunity for men and women engaged in medical work, as well as for all for whose health they strive, to join together in public worship. The Guild of St. Luke, which was founded in 1864, has for its object the mutual encouragement and support of its members in leading a Christian life. It was meant primarily for medical students, by whom it was founded, as a help in the special difficulties and temptations of a medical student's life. It still desires to appeal especially to medical students, but it also serves to keep before the mind of all who deal with the diseases of the body that highest part of man's nature which finds its expression in religion. Membership of the guild is open to students and practitioners of medicine who are communicants of the Church of England, the clergy of which are eligible for election as clerical associates. The entrance fee is 1s., and the annual subscription not less than 2s. 6d. nor more than £1 1s. Chapters of the guild are held frequently in London, and there are wards at Cambridge and elsewhere. There are also in London a women's ward and a medical students' branch. Tickets for the service and further particulars concerning the guild may be obtained on application, accompanied by a stamped and addressed envelope, to the guild secretary, the Rev. H. Kirkland-Whittaker, M.A., M.D., Chaplain's House, Banstead Downs, Sutton, Surrey, or to the secretary of the women's ward, Dr. Isabel Pulteney, 2, Bryanston Place, London, W.1.

AN ISLAND WITHOUT DENTAL CARIES.

Dr. Michael Grabham of Madeira read a short paper in the Physiological Section of the meeting of the British Association in Liverpool on some recent researches he has been making among the people of Porto Santo, the northern island of the Madeira archipelago. He gave a detailed account both of the geology of the district and of his own mineral discoveries, and also a review of the meteorological and sea-current conditions which govern climatic features. The local springs are highly mineralized with chlorides, carbonates, and sulphates, in contrast with the sweet waters of Madeira. A thorough geological survey is long overdue and would yield important results. Trachyte is the main feature of the Porto Santo volcanic ejecta, as compared with the basalts of Madeira. Christopher Columbus resided at Porto Santo, was married there, and the house in which, according to tradition, he lived is still shown. Dr. Grabham suggested that the seeds and other jetsam thrown on the shores of the island by the sea currents helped to convince the great navigator of the existence of lands beyond the setting sun. The climate of Porto Santo is fresh and sunny, and less humid than that of the main island of the group, as is evidenced by the contrast between the vegetation at Porto Santo and the weedy profusion of esculents at Madeira. The features of the diet of the people at Porto Santo are that they take no milk or green vegetables and nothing involving grinding mastication. They take their food cold, and their main sustenance is derived from maize boiled with a modicum of lard, with a fitful addition of fish and an onion or two. Dr. Grabham saw no case of scurvy, but many instances of pulmonary disorder. The absence of diarrhoea and alimentary ailments was remarkable, and the mineralized waters seemed inimical to intestinal parasites. Dr. Grabham found no existing instance of malignant disease. Traditionally some cases have occurred, but no form of cancer has taken root at Porto Santo, and Dr. Grabham is inclined to associate this exemption with the simple feeding of the people and with the absence of animal fats, except the small quantity of lard consumed with the maize. In this connexion, too, he lays stress on the marked absence of alimentary disorders premonitory of cancer liability. Nearly 3,000 people live at Porto Santo, and the main object of Dr. Grabham's visit was to inquire into the boasted immunity of the inhabitants from dental caries. Six hundred natives were examined, and yielded 28 cases of well established caries. All of these people except seven had come from Madeira, and only two of the seven showed the sign which characterizes the Porto Santo dentition. This sign consists of a slight yellow band which develops in early life on the upper incisors. It occurs with a regularity which, in Dr. Grabham's opinion, clearly indicates a vitalizing permeation of the blood fluids among the columnar structure of the enamel, associated with an influence protective against the access of caries. Both the stain and protective influence are almost certainly conveyed in the highly mineralized water of the island, which is growing in repute and application in the colonies of Portugal, but Dr. Grabham wishes to be regarded as a pioneer whose work and inferences should be confirmed before any steps are taken to make the district available as a spa in a winterless region. Dr. Grabham showed a skull of a Porto Santo man of about 60 years of age taken promiscuously from an exposed grave; the teeth in this skull (which is now deposited in the museum of the Royal

College of Surgeons of England) were all sound; he exhibited besides many specimens of the soil, the vegetation, and the mineral water, with analyses. Porto Santo is now accessible by fairly large steamers, but Dr. Grabham, who is now well advanced in his eighty-fourth year, accomplished the voyage of forty miles from Madeira in an open sailing boat during the night in safety and with satisfaction.

EARLY MEDICAL JOURNALS.

Everyone interested in the history of medical journalism who can read Italian will enjoy the scholarly article on the dawn of Italian medical journalism by Professor Castiglioni,[1] the well known medical historian of Trieste, to whose fascinating study of Benvenuto Cellini we have drawn attention (March 10th, p. 433). Although primarily concerned with the history of early Italian medical journals, the article contains several instructive facts relating to the origin, not only of medical and scientific journals, but also of the lay press. The first newspaper, as we pointed out in "Nova et Vetera" on October 28th, 1922, page 808, was due to the initiative of a medical graduate of Montpellier named Théophrastus Renaudot, who published the first number of his *Gazette* on May 30th, 1631. The first scientific journal in which medical articles appeared would seem to have been the *Journal des Sçavans*, which was published in 1665, a few months before the *Philosophical Transactions*, the organ of the Royal Society of London, first appeared. The earliest journals devoted exclusively to medicine had only a short existence. In 1679 the empiric Nicolas de Blegny started the *Journal des nouvelles découvertes sur toutes les parties de la médecine*. It continued publication for only three years, when the editor, as the result of accusations of ignorance and immorality brought against him by the Paris Faculty of Medicine, was thrown into prison. The first medical journal to be published in England, *Medicina Curiosa*, appeared in 1684, but it had an even briefer span of life; Germany's first medical journal, entitled *Der patriotische Medikus*, survived from 1724 to 1726. The first Italian medical journal, *Giornale di medicina*, was published at Venice in 1726. It was issued weekly, and consisted of eight quarto pages; it was in two parts, the first containing reviews of the principal foreign journals, and the second articles by Italian medical writers. It ceased publication in 1781, and two years later another appeared entitled *Giornale per service alla storia ragionata della medicina di questo secolo*, which lasted until 1795. Dr. Castiglioni devotes a special section of his article to the account of a journal which was published monthly at Trieste by Benedetto Frizo, a well known physician and writer, under the name of *Giornale medico e literario di Trieste*. Its interest, however, lay less in its medical importance than in the fact that it represented an independent expression of Italian thought in spite of Austrian repression. With the beginning of the nineteenth century Italian medical journals began to assume a greater importance and enjoy a wider circulation than before. The *Giornale della Societa Medica-Chirurgica di Parma*, which first appeared in 1806 and lasted till 1815, occupied a very important position in Italian medical literature. It was published monthly and consisted almost entirely of signed original articles. Dr. Castiglioni gives the following statistics relating to medical journals in recent years: At the end of 1913 the total number in existence throughout the world was 1,654, of which 630 were American, 461 German or Austrian, 268 French, 152 British, 75 Italian, and 29 Spanish. Dr. H. O. Hall, director of the Surgeon-General's Library at Washington, calculated that the number fell from 1,895 in 1916 to 1,240 in 1921, so that the war was responsible for a reduction in the number of medical journals by about a third.

[1] *Archeografo Triestino*, vol. x della iii serie. Trieste: Tipografia del Lloyd Triestino. 1923. (6½×9½, pp. 40; 6 plates.)

BIOMATHEMATICS.

We think it was no less a man than Sir Francis Galton who, having occasion long after his school days to study some properties of an ellipse, was a little disheartened by the mass of information presented in a textbook of conic sections. Certainly smaller men, intrigued by the mathematical notation of so many physiological, biochemical, and medico-statistical papers, who have consulted the school books of their sons, have experienced even more disappointment than Galton, who had a first-rate mathematical brain. Many attempts have been made to explain to grown men the notation of mathematical methods, but we are not acquainted with any work which covers so wide a field as Dr. W. M. Feldman's *Biomathematics*.[1] Dr. Feldman does not attempt to teach mathematics *sensu stricto*, and he refrains from the logically rigorous demonstration of various fundamental theorems. What he does is to explain the notation and to illustrate each symbolic process upon a concrete example likely to interest a medical reader. Many of the examples are themselves of considerable biomedical interest; hardly any—except perhaps those of animal mechanics—are so much simplified as to remind one of the immortal very small elephant whose weight might be neglected. The concluding chapter, on biometrics, is based upon Caradog Jones's textbook, and some sections of it are rather beyond the scope of readers not specially interested in mathematical statistics. In his luminous introduction Sir William Bayliss uses the following words: "The variety of knowledge that the physiologist, for example, has to call to his aid is so vast that he really cannot spare the time to master these textbooks [that is, regular textbooks of mathematics]. The present work seems to me to have succeeded in giving just what is likely to be useful." The book is not, of course, easy reading: the inherent difficulties of the subject are considerable, but Dr. Feldman has taken great pains to reduce difficulties to a minimum. The preparation of such a book as this must have been difficult and laborious. We hope that the medical profession will profit by the author's labour. He has really left no excuse for the neglect of scientific papers employing mathematical notation by those educated men who sometimes almost seem to boast that they cannot understand "mathematics."

[1] *Biomathematics. Being the Principles of Mathematics for Students of Biological Science.* By W. M. Feldman. M.D.Lond., F.R.S.Edin. Introduction by Sir W. M. Bayliss, M.A., D.Sc., LL.D., F.R.S. London: C. Griffin and Co., Ltd. 1923. (21s. net.)

ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH.

The St. Andrews Institute for Clinical Research, founded by Sir James Mackenzie five years ago, has in that period accomplished a great deal of valuable research work in clinical medicine, much of which has been reported by Sir James Mackenzie and his fellow workers in our columns. The latest instance is the essay by Professor Herring on the regulating and reflex process, the first part of which is published in our issue of this week. The Institute occupies two large houses looking out on the North Sea on the further or eastern side of the famous golf links. As he has himself recounted in this Journal, Sir James Mackenzie has succeeded in enlisting the active co-operation not only of most of the scientific staff of the University of St. Andrews, but also of many medical practitioners in the town and district. Patients are seen at the institute, researches are carried out, and elaborate notes kept. Visiting practitioners are welcomed, and Sir James Mackenzie gives frequent informal talks about what has been found out, and,

more especially, about what has not yet been found out but he hopes may yet be found out, through the application of the methods he has devised. The financial stability of the institute is still a matter of some anxiety. Sir James Mackenzie has himself been one of the most generous benefactors, and we are glad to hear that a special fund is being raised in Perthshire, his native county, to provide an endowment fund, which, it is hoped, may eventually reach £10,000. Already, it is stated, the sum of £5,000 has been received by the council of the Institute as a first instalment. Perthshire may well be proud of her son, and we fervently hope that the total aimed at may shortly be obtained.

INEQUALITY OF THE PUPILS IN PULMONARY TUBERCULOSIS.

INEQUALITY of the pupils in pulmonary tuberculosis has been recently called the sign of Roques, who, in 1873, wrote his Paris thesis on inequality of the pupils in unilateral affections of various parts of the body. In addition to the inequality of the pupils, which is obvious and is spoken of as spontaneous, there is a latent inequality which becomes visible only after a mydriatic is put into both conjunctival sacs; this inequality is spoken of as provoked. In a small monograph, appropriately from the Laënnec Hospital in Paris, Dr. W. Jullien[1] deals with this question of anisocoria in pulmonary tuberculosis and records his observations on 61 cases of unilateral disease; he found spontaneous inequality in 26 per cent. and provoked inequality in 71.4 per cent. Inequality of the pupils may be due to dilatation caused by irritation of the sympathetic by pleuritic adhesions near the apex of the lung, or more rarely to myosis from paralysis of the sympathetic caused by a destroying lesion. But careful analysis shows that the pupils may be unequal in the absence of any apical disease, and therefore that these explanations will not fit all cases; it also proves the error of the hope that equality of the pupils, by rendering pleuritic adhesions improbable, would be evidence in favour of a successful artificial pneumothorax. As inequality of the pupils may accompany any disease of the lung, such as pneumonia, bronchiectasis, tumour, and hydatid, it appears probable that in many instances at least the inequality is reflex through the vagus, medulla, and superior irido-dilator fibres. Jullien divides the inequalities of the pupils into two groups: the slight and transient, accounting for most instances of this sign in pulmonary tuberculosis; and well marked inequality of the pupils, rare in pulmonary tuberculosis and found usually in syphilized patients.

THE first Victor Horsley Memorial Lecture, which is to be given by Professor Sir Edward Sharpey Schafer, F.R.S., will be delivered in the Barnes Hall of the Royal Society of Medicine on Thursday, October 25th, at 5 p.m. The subject is the relations between surgery and physiology.

THE Fothergillian Prize Committee of the Medical Society of London has awarded the Fothergillian Medal and Prize to Sir Arthur Keith, F.R.S., F.R.C.S. The presentation will be made at the general meeting of the Society to be held on Monday next, October 8th, at 8 p.m.

THE first of the museum demonstrations for this session at the Royal College of Surgeons of England will be given by Sir Arthur Keith on Friday next, October 12th, at 5 p.m. The subject is hernial formations of an acquired nature which form at various points of the alimentary canal and at other sites.

[1] *Inégalité pupillaire et tuberculose pulmonaire.* Par le Docteur W. Jullien. Paris: Amédé Legrand. 1923. (Roy. 8vo. pp. 117: 2 plates, 13 figures.)

OPENING OF THE MEDICAL SCHOOLS.

ST. GEORGE'S HOSPITAL.

MR. E. B. TURNER'S ADDRESS ON "PRACTICE."

[Abstract.]

To do well in practice a very sound knowledge of your profession, though by far the most important, is by no means the only factor which makes for success. Personality, tact, sympathy, understanding, and a profound knowledge of human nature are indispensable, and you cannot commence to cultivate these essentials too early. If you, therefore, wish to do well you must become a "man of parts" in every sense of the word. For this reason I urge every one of you to have some interests outside your actual profession; cultivate some hobby. For some of you your inclinations may lead you to vary your work by taking up some other line of scientific research; but those of you to whom sport in any form is a real recreation, "grapple it to your soul with hooks of steel." Play the strenuous games while you are here, so long as you may be able; afterwards harass the ball in milder fashion, slay the grouse, or beguile the fish whenever you get the chance. A sporting reputation will often be of service to you in quite unexpected ways.

There are two subjects which, if you wish to do well, you must practically make a part of yourselves—anatomy and physiology. These are the twin rocks on which the whole edifice of your work, both here and in practice afterwards, is founded and built. The General Medical Council, when revising the curriculum last year, was so impressed with the necessity of a continuing knowledge of these two subjects that it enacted that the teaching of both should be continued during the whole course of professional education, and that the student's knowledge should be thoroughly tested in the final examinations, both in the anatomy of the living body and in that of the subject. Whenever you get a chance do things for yourselves. Do not be satisfied with watching others demonstrate how they should be done. Under the new regulations for examinations more value will be given for practical work; a brilliant theoretical paper will not in future outweigh bad clinical or practical work. Supplement your reading by the work of your hands on every possible occasion.

I most strongly advise every one of you to set your faces steadily towards house-office, either here or, if that be not possible, in some other institution. You will be infinitely better qualified for practice if you have worked as house-physician and house-surgeon under the supervision of the staff of some hospital. Not only will the experience gained from your cases and the responsibilities you will have to face be invaluable, but if, as I hope is still the custom here, you teach in the wards as you go round, that teaching will increase your own knowledge fourfold. The greater number of you will go out from here and start work as general practitioners, or in other words you will take up your positions in the first and front line of defence against disease and death. In London and the great industrial centres you will be the first to see the beginnings and earliest symptoms of mischief which in many cases may be but of little moment, but in others of the greatest importance. In the sparsely populated rural districts you will be even more responsible. In either case your motto must ever be "Principiis obsta," and the early exercise of your intelligence and acumen will save many a life and put a term to years of unnecessary invalidism. You will have the advantage of seeing your cases when it is possible to benefit them; your supports—the heavy guns, the consultant and the specialist—often have no chance of doing much good as they may arrive on the scene too late. Therefore, during your preparation for future practice cultivate without ceasing the ability to make an early and accurate diagnosis, coupled with a sound prognosis, in every case you may see, however commonplace and trivial it may appear at the first glance.

Let me warn you that you will not see in private practice the same sort of cases which you meet with in hospital. In a great hospital you have gathered together persons afflicted with severe and pronounced disease and cases which, from their nature and environment, are beyond the possibility of proper treatment by the outside practitioner. In industrial districts and mining areas such cases are more frequent, but if your lot should be to look after the well fed, well clothed, well housed sections of the community you will be surprised at the small proportion of cases of really serious illness you will be called on to attend. Being familiar with all the grave manifestations of disease which you meet with in the wards, you will be able to go with exceeding confidence into a house, in the sure and certain faith that whatever you may there find cannot be worse than that which you have habitually seen treated here. But above all things, never forget to carry with you into your private practice that habit—the most important of any you may acquire in hospital—the habit of always examining and noting the condition of every organ in every case. A very large proportion of the mistakes made are due not to any lack of knowledge or skill but solely to the fact that one or more important organs have not been carefully passed under review.

Cultivate at all costs that which, wanting a better term, I will call your clinical instinct. Make your diagnosis with your brains, your eyes, your fingers, and your ears; and then bring in your machinery to confirm or disprove your findings. Of late years I have noticed that many men are chary of expressing an opinion, even upon a fairly obvious case, until they have made the way plain before them by laboratory tests and instrumental assistance. To use the invaluable methods of modern research in this fashion is to degrade them to the function of crutches, whose constant use will enfeeble your intellectual muscles and doom your independent perceptions to atrophy. Times without number you will find the eye, the finger, and the stethoscope, used with a trained clinical intelligence, beat the test tube, the *x* ray, and the swab.

At all times be very gentle with your patients. The heaviest-handed and kindest-hearted physician that ever went round the wards of this hospital, what time he severely pounded an extremely tender and sensitive abdomen thus exhorted the students standing round: "Never excruciate your patient; you can find out all you want without excruciating your patient; never excruciate your patient." The particular victim in this case had the gift of humour and fully appreciated the precept and the example. Take great pains to make an invalid as contented as possible; let the yoke of your restrictions be as easy and the burden of your directions as light as the exigencies of the case will allow. The bed of sickness is not the bed of Procrustes; you must fit the bed to your patient, not your patient to the bed. The drastic drugs which are the salvation of a navvy are anathema to a thin-skinned, fair-haired, blue-eyed girl. Never prescribe for a person until you have shaken hands with him and thus assured yourself of the texture of his skin; and in speaking of treatment let me remind you that year by year you will see the rise and follow the decline and fall of many loudly vaunted remedies. It will be your lot to watch an endless procession of fetishes, each one surviving until pushed out of the limelight by its successor. In the morning they flourish like a green bay tree; in the evening they are cut down, dried up, and withered.

> "Truditur dies die,
> Novaeque pergunt interire lunae."

In the course of your future work you are bound to come in contact with your fellow practitioners in many ways and on many occasions. In our profession we are extremely individualistic, and friction at times is inevitable. If you make it a rule to put yourself in the other man's place, and act as you think he should act towards you, fighting will be at a discount and ethical rules superfluous. Should you ever hear from a lay person that a doctor has given some extraordinary opinion, don't believe it. A dear old friend of mine once asked me whether it was possible that a certain person had some fearful and wonderful disease. I replied, "No." "But her doctor told her so," she said. I told her that no doctor could have told her such a medically and surgically ludicrous thing. "But," she insisted, "So-and-so distinctly told me that was what her doctor said." My reply finished the discussion—"I am quite sure he did not, for I am So-and-so's doctor."

In whichever branch of your profession you finally practise you will make lifelong friendships. You will acquire merit where you deserve blame, and blame when worthy of praise. For those of us whose lot, sooner far than later, will issue from the Urn—whose lancet, like the arms and war-weary lute of Horace, will soon be laid aside—the time is at hand when we must humbly hope that we may say, with him, "Militavi non sine gloria."

ST. MARY'S HOSPITAL.

The commencement of the winter session at St. Mary's Hospital Medical School, on October 1st, was signalized by the holding of the annual dinner of past and present students that evening at the Connaught Rooms. The chairman, Mr. V. Warren Low, C.B., senior surgeon at the hospital, was supported among many others by Mr. H. J. Waring, Vice-Chancellor of the University of London; Mr. A. R. Prideaux, Chairman of the Hospital Board; Surgeon Rear-Admiral J. Chambers, the new Medical Director-General of the Royal Navy; Lieutenant-General Sir William Leishman, F.R.S., Director-General A.M.S.; Air Commodore David Munro, Medical Administrator R.A.F.; Sir Leonard Rogers, Sir John Broadbent, Sir William Willcox, Mr. Ernest Lane, and the Mayor of Paddington. The chairman, in proposing prosperity to St. Mary's Hospital and Medical School, began his entertaining speech with a few personal reminiscences drawn from nearly forty years' association with the Hospital and its School. He remarked on the praiseworthy shortness of the toast list, observing that after-dinner speeches were often too much like sermons, and modern sermons too much like after-dinner speeches. St. Mary's, he said, could not claim antiquity; it had only reached the respectable age of 80 years, and must rather look more to descendants than ancestors for its traditions. Nevertheless, the Hospital had already been most fortunate in the distinguished line of physicians and surgeons who had devoted themselves to its service. Among those Mr. Warren Low mentioned in particular the Lane family, Dr. Cheadle, Sir William Broadbent, and Mr. Edmund Owen. The toast was responded to by the Chairman of the Hospital Board and the Dean of the Medical School. Mr. Prideaux in his reply was able to give a satisfactory account of the hospital's finances during 1922 and 1923; instead of heavy deficits as in the two previous years, the income now balanced the expenditure. None of the hospital wards were closed, but the problem of providing paying wards for persons of moderate means still awaited solution. Dr. C. M. Wilson, in his brief account of the fortunes of the Medical School, spoke first of the valuable work carried out in the teaching of the preliminary subjects. The success of the school, he said, must be based on its anatomical and physiological departments. The unit system was a great feature of the present-day clinical teaching, though this had meant the sacrifice of beds by other members of the medical staff. The students now numbered 400, but the difficulty of providing material for the instruction of so many had been largely met by the arrangements entered into by St. Mary's with the Paddington Infirmary, and more recently with Queen Charlotte's Hospital. The post-graduate course during the past summer had been most successful, and was attended by very large numbers, showing the appreciation felt for this work by old students. In response to the chairman's invitation, Dr. Milner Moore of Eastbourne, as the senior of the old students present and one of the founders of the annual dinner, told very briefly something of the origin of these annual gatherings in the late sixties. The concluding toast was the chairman's health, submitted in very warm terms by his friend and colleague on the Council of the Royal College of Surgeons, Mr. Waring.

MIDDLESEX HOSPITAL.

The opening of the winter session of the Middlesex Hospital Medical School took place at the Scala Theatre on October 2nd, when the Earl of Athlone presided, and Princess Alice, Countess of Athlone, presented the prizes to the students and nurses. An address, accompanied by the lantern, was delivered by Mr. Somerville Hastings, F.R.C.S., on "Team work in nature."

Mr. Hastings cited numerous examples, such as bees, ants, corals, migrating birds, to show how much team work there was among creatures of the same sort, but he went on to describe how plants and animals of different kinds also co-operated, how, for example, plovers lived with crocodiles, and sea anemones with hermit-crabs, to the advantage of both, how tiny seaweeds lived in the interior of marine worms, each party to the "contract" gaining by the association, and how the pollen of flowers was carried by insects. He spoke in particular detail of fungi, describing some recent investigation on the team work which was carried on by these lowliest of plants in association with other plants and animals. The lichen, for example, was really a dual organism, composed of a fungus united with a green plant (an alga), and both constituents benefited from the alliance; the alga obtained water and mineral matters collected from the soil by the fungus, and the fungus obtained carbon products which the alga collected from the air by the aid of light. Nearly all flowering plants had fungi associated with them at some stage of their life history. Many tropical fungi, again, showed an unmistakable adaptation for the dispersal of their spores by insects, or by slugs which ate the plant. Mr. Hastings concluded by applying his subject as a parable to the team work in the wards of the Middlesex Hospital, where physicians, surgeons, sisters, and nurses, not to mention the humble specialists, united in the single purpose of healing the sick.

The Dean of the School (Mr. A. E. Webb-Johnson), in a brief report of the year's work, after a reference to the losses sustained during the year, and to the honours gained, spoke of the additions which have been made to the Bland-Sutton Institute of Pathology during the year. The Council of the School decided early in the year to increase the accommodation for pathological research. A new top story was therefore added to the new building which had been put up in 1914-15, and this furnished accommodation for secretarial offices, a library, a large laboratory for public health work, and two smaller research laboratories. The building now consists of four stories, the three lower ones containing a museum, a lecture theatre seated for upwards of 160, and two large teaching laboratories with 70 working places.

After the prizes had been presented a number of complimentary speeches were delivered by Sir John Bland-Sutton, Dr. C. E. Lakin, Mr. Sampson Handley, and others. The Earl of Athlone expressed his great regret that Mr. Webb-Johnson was contemplating the relinquishment of his office as dean. It was no disparagement of his predecessors to say that Mr. Webb-Johnson's work would be remembered by Middlesex men for generations. At a critical stage in the history of the School he had conceived and carried out schemes for its development which its founder, Sir Charles Bell, in his most imaginative moments could hardly have thought to be possible. He had provided them all with an object-lesson of what could be done, even in difficult circumstances, by having a wide outlook, a discriminating judgement, a respect for tradition, and the will to strive until a worthy purpose was attained.

CHARING CROSS HOSPITAL.

The winter session of the Charing Cross Medical School was opened on October 3rd with the distribution of prizes by Dr. William Hunter, C.B.

Addressing the students, Dr. Hunter spoke of the romance connected with medical studies. This was a feature not very obvious to the student himself. The amount of knowledge he had to acquire was stupendous, ten times greater now than it was twenty years ago. Yet the medical student had great consolations, chief among them the interest of his studies, in particular the great problem of disease, the variety of forces marshalled for the attack against health, and still more wonderful variety of forces which the body marshalled in its own defence.

Dr. Hunter proceeded to set forth the stages in the advance of medical knowledge. First came the era of clinical medicine, when the symptoms and main characteristics of the different diseases were recognized. The second great stage, commencing about 1850, was the era of morbid anatomy; the third the era of bacteriology; the fourth (on which he spoke at some length) the era of surgical sepsis and antisepsis. At first the subject of sepsis appeared to be confined to the realm of surgery, but during the last twenty years a silent resolution had been brought about in the general view with regard to the importance of sepsis in medicine. The removal of the foci of septic infection in medical cases had been followed by results often as striking as those met with in surgery. One great point of practical interest in this development was that the seat of the sepsis referred to was connected in the great majority of cases with a region of the body most accessible to treatment—namely, the teeth and their sockets. The subject of oral sepsis should be of special interest to the students of that school, because it was from Charing Cross that the subject was first advanced.

Dr. Hunter went on further to speak of the era of anti-toxin and protective inoculation, and of other great recent advances, and then turned to consider the object of medical education. This was not merely to acquire knowledge, but to train the faculty of observation, and for this purpose no class of education was better adapted than daily contact with patients. To emphasize unduly the importance of laboratory methods at the expense of clinical observation was disastrous alike to the patient and to the great science of medicine. Having spent the whole of his professional life with one foot in the wards and the other in the laboratory, he would say that if the alternatives were placed before him of seeing the laboratory reports or seeing the patient, he would rather base his diagnosis, prognosis, and treatment on his own bedside observations than on any series of laboratory reports, however detailed. At the same time he urged the students to make themselves fully acquainted with the meaning and the value of the laboratory method. In conclusion, he said that medicine offered a career of glorious adventure, and carried with it a human interest such as no other profession contained.

KING'S COLLEGE HOSPITAL.

The opening of the ninety-fourth winter session at King's College Hospital Medical School took place on October 3rd, when the prizes were presented by Mr. H. J. Waring, F.R.C.S., Vice-Chancellor of the University of London. Viscount Hambleden presided.

The Dean (Dr. Willoughby Lyle), in reporting on the work of the school, said that at the present time there were 244 unqualified students in residence; of these 94 were women; 97 were working at the preliminary and intermediate courses at King's College and elsewhere, and 147 were pursuing their final studies at the hospital. In the medical school there were also 44 qualified students who were preparing for higher qualifications and degrees. Much of the success of the work of the school during the past year had been due to the carefully organized teaching and to the energies of the whole-time experienced clinical tutors in medicine, surgery, and midwifery. He regretted to state that there were still something like a hundred beds closed to the public through lack of hospital funds.

Lord Hambleden thanked the students for the assistance which they had given on various occasions in raising money for the hospital. The greatest development at King's College Hospital which was being undertaken to-day was the establishment of a dental school. Dr. A. Livingston had been appointed director of dental studies and had been working very hard for some months on its organization and equipment, and he hoped that before long the school would be ready to receive students and afford treatment to out-patients. Every facility would be given to the students of

the dental school for studying medicine and surgery; it was hoped that they would go on to take the degree of practitioner of dental surgery of the University of London and that the majority of them would obtain a medical as well as a dental diploma.

Mr. H. J. Waring, having presented the scholarships, prizes, and certificates, addressed the students. He said that it had occurred to him that it might be useful to the students if he offered some remarks on the way in which they should arrive at their conclusions in the practice of medicine, and how it could best be ensured that those conclusions were the correct ones. If the conclusions were to be sound they must be based on accurate data. He laid stress first upon the intelligent use of the senses. The stethoscope revealed nothing except to the trained and discerning ear, and the finger of the physician or surgeon was itself an instrument so delicate and sensitive that he could not overestimate its services. On more than one occasion he had seen a medical student make a careful examination of an artificial eye and make a report on its optical capacity without discovering that it was not real. Why was Lister such a great force in surgery, and what was it that enabled him to revolutionize surgical practice throughout the world? It was his constant habit of patient observation. There was nothing he more emphasized in his teaching than the value of the observant eye. He was also very keen on the necessity for a thorough grounding in the preliminary sciences.

The general practitioner was concerned less with the prosecution of research than with immediate diagnosis and treatment, but this offered as great a sphere as any other for continuous and intelligent observation. The general practitioner had on occasion to make quick and important decisions under conditions of extreme difficulty, and the use of eye, ear, touch, and smell was of fundamental importance. Even the negative evidence of the senses could be of great use. It enabled certain possibilities to be ruled out, and the field of alternatives to be correspondingly narrowed. It remained for the mind to balance the evidence, sometimes apparently contradictory, of the senses. A small and insignificant difference in the initial data might prove of enormous consequence when it had to turn the scale in forming a conclusion. At the end of his brief address, Mr. Waring emphasized the value of logic and of carefulness in deduction.

Dr. Raymond Crawfurd moved a vote of thanks to the Vice-Chancellor, which was seconded by Sir Lenthal Cheatle.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

The opening of the new session of the London (Royal Free Hospital) School of Medicine for Women took place on the afternoon of Monday, October 1st, when the inaugural address was given by Sir Humphry Rolleston, K.C.B., President of the Royal College of Physicians of London, on "The problem of success for medical women." The address is printed in full in the opening pages of our present issue. The audience included many members of the teaching and hospital staffs and a large number of past and present students. The report of the Dean, Dr. Louisa Aldrich-Blake, showed that there has been a decrease in the entry of students; the total number is now 438, of whom 53 have entered this session. The report drew attention to the ample opportunities for professional practice now open to experienced women, and noted with gratification the success of qualified students of the London School of Medicine for Women in obtaining appointments. The vote of thanks to Sir Humphry Rolleston for his address was proposed by Dr. A. G. Phear, Physician to the Royal Free Hospital, who remarked that a visit to the rowing, tennis, swimming, and social clubs in connexion with the school would show that the woman medical student knew how to play as well as how to work.

THE MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

The annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society, Limited, was held at the offices of the company, 300, High Holborn, W.C.1, on October 1st, when Dr. F. J. Allan was in the chair.

The Chairman said that the members of the society could congratulate themselves on the steady progress made during the year, as shown in the annual report, which had been circulated. In the sickness and accident branch the number of policies issued was 353, an increase of 113 over the previous year. During the year £19,072 had been paid out on account of sickness and accident claims, a decrease of £1,200 as compared with the preceding twelve months.

In accordance with the resolution adopted at the last annual meeting, bonuses amounting to £15,402 had been returned to members. Letters were constantly being received from members expressing their grateful thanks for the assistance which the society had rendered to them while incapacitated, for the sympathetic way their claims had been dealt with, for the absence of unnecessary restrictions, and for prompt settlement. Many of the letters expressed regret that so many medical men did not take advantage of the excellent terms offered by the society. Some of the applications for sickness and accident policies were received through recommendations of existing members, and the chairman urged all members to assist by bringing the benefits of the society to the notice of their friends, and to point out the advantages of being insured in a society formed by and for doctors and dentists on mutual lines.

The life assurance branch showed a gratifying increase of about 30 per cent. over the preceding year; the sum assured amounted to £77,950 net, which clearly showed that the profession was realizing the value of the policies which the society offered at such reasonable rates of premium. The claims through death were well within the expectation. Members were asked to study carefully the varied methods of life insurance set forth in the different tables in the latest prospectus, and the society was always willing to consider the wants of applicants who might desire some special form of insurance other than those shown in the tables. Over £5,000 was being paid out in annuities to members over 65, and it was expected that that amount would increase for some years. Only two annuities had been taken out during the year, but that was not a matter of regret, as, owing to the prolonged life of annuitants, annuity business was considered by many life assurance companies to yield little if any profit at the rates at present charged, which were based on experience of longevity as it existed forty years ago, when life was shorter than it was now. It was anticipated that the rates for annuities would be increased as the result of an investigation by a committee of actuaries, whose report was expected to be shortly issued.

The rate of interest earned on investments was £3 14s. 6d. per cent. after deduction of tax, which was 3s. 6d. more than last year. The greatest care was always exercised in selecting securities of the best class.

In concluding his address the chairman said that the board desired to express its appreciation of the way in which the business of the company was conducted by the staff; he moved the reception of the annual report.

Dr. G. Porter, in seconding the adoption of the report, referred to the fact that when he joined the society the funds amounted to £75,000, whereas at the present time they had over £360,000. He considered that the directors had to be very much congratulated.

In reply to an inquiry the Chairman stated that about sixty women medical practitioners had joined the society.

The motion for the reception of the report, having been put to the meeting, was carried.

The next item of business was the election of two directors, and as Dr. F. J. Allan and Dr. W. K. Sibley had had to retire, but were eligible for re-election, Dr. Martley took the chair. On the motion of Sir William Willcox, seconded by Dr. Harvey Hilliard, the two retiring directors were re-elected. Dr. Allan thereupon reoccupied the chair.

Messrs. Harber, Sturges, and Fraser were reappointed auditors for the ensuing year.

With reference to a resolution adopted at the last annual general meeting granting extra remuneration to the chairman and directors, which had not been carried out since it was found that proper notice had not been given, it was now proposed by Dr. Campkin and agreed that remuneration in addition to that mentioned in Article 28 of the company's Articles of Association be paid to the directors as follows:

> To the chairman and each director the sum of £1 1s. for every attendance at the meetings of the board or of committees of the board and general meetings.

The following resolution, moved by Dr. D. Forsyth, was adopted:

> That with a view to carrying out the resolution passed by the last annual general meeting, a sum of £552 6s., in addition to the ordinary remuneration, be voted to the directors for their past services.

On the motion of Dr. Vinrace a hearty vote of thanks was accorded to Dr. Allan for his services in the chair.

England and Wales.

Manchester Post-Graduate Courses.

A free course of lectures will be given alternately at the Salford Royal Hospital and Ancoats Hospital, Manchester, on Thursdays at 4.30 p.m. The subject of the first course will be "Surgical tuberculosis," and the lectures will begin on Thursday, October 18th. The intention is to get away from the usual style of post-graduate lecture, and for this reason a definite subject will be taken up for consideration. The lectures will be illustrated by lantern slides, pathological specimens, demonstrations of clinical cases, etc. The titles of individual lectures will be announced in the weekly diary published in the Supplement. A free course of lectures of similar scope will be delivered after Christmas by the physicians of the two hospitals on a subject which will be announced later.

Post-Graduate Courses in London.

The Fellowship of Medicine and Post-Graduate Medical Association has arranged a fortnight's intensive course in children's diseases, consisting of clinical demonstrations in all departments, to be given at the Victoria Hospital for Children from October 8th to 20th. A special course in laryngology, rhinology, and otology will also take place at the Central London Throat, Nose, and Ear Hospital from October 8th to 26th. Clinical lectures and demonstrations in the wards and out-patient department will be given each day from 9.30 to 5 p.m. From October 15th to 27th two short courses will be given in cardiology at the National Hospital for Diseases of the Heart, and in proctology at St. Mark's Hospital for Diseases of the Rectum; both courses will include clinical lectures and demonstrations by members of the staff each day. A short course in dermatology will be held at the Hospital for Diseases of the Skin, Blackfriars, from October 29th to November 10th. The next fortnight's "refresher" course in general medicine and surgery will be given by the Royal Northern Hospital, in conjunction with the Central London Ophthalmic Hospital, the North-Eastern Fever Hospital, and the Royal Chest Hospital, from November 5th to 17th. Copies of the syllabus and full particulars regarding the above courses can be obtained from the Secretary to the Fellowship of Medicine at 1, Wimpole Street, W.1. As the numbers are limited for some of the courses early application should be made.

Sheffield Royal Infirmary.

The new *x*-ray department of the Sheffield Royal Infirmary was opened by the Lord Mayor of Sheffield, Alderman Fenton, on September 26th. Mr. H. H. Bedford, the chairman of the board, who presided, said that with the increase in the work of the radiological department the board were very anxious to re-house it, and the Orthopaedic Committee had given them £2,000 for this purpose; an old member of the board, Mr. Huntsman, had also promised £500 towards the building. The board had been further encouraged that morning by receiving a cheque for £500 from Mr. Dixon for the new ear and throat department. Dr. Rupert Hallam, who is in charge of the radiological department, described the new apparatus and gave a brief survey of the development of radiology. The first apparatus had been installed in the Infirmary in 1899, but while it had been improved year by year it had also become very expensive. It was now necessary to have three rooms, each with a separate equipment, to cope with the work; both out-patients and in-patients were passing through the department all day long, necessitating a whole-time staff of four persons. In designing the new department the first consideration had been the safety of the staff and patients. The control room was completely lined with thick sheet lead, and the very best apparatus had been installed.

Sunderland Royal Infirmary: New Theatre Block.

On September 26th the new operating theatre block built and equipped by his family in memory of the late J. Y. Short, Esq., J.P., shipowner, at a cost of £7,000, was opened by his widow and his son, Mr. T. Short. Mr. Burnicle presided over the meeting and showed the necessity of this addition owing to the increasing work done in the Infirmary; although he had visited many of the largest hospitals during the last two years, he had seen no theatres that were at all comparable with these. Dr. Wm. Robinson, chairman of the Medical Board, described the new building and said that the site had been carefully selected so that the block would not interfere with the future extension of the wards of the Infirmary which was much needed because of the great length of the waiting list. The block consists of a suite of eleven rooms opening off a central corridor—namely, (1) a dark room for examination of the eye, ear, throat, and nose, cystoscopy, etc., and in which mastoid and similar operations can be done; (2) a recovery room with two beds; (3) surgeon's preparation room with six lockers, a long and a shower bath, wash-basin, and w.c.; (4) an anaesthetizing room; (5 and 6) two large theatres—one side of each is all glass and part of the sloping roof; (7) an instrument and surgeon's final preparation room; (8) a sterilizing room; (9) sister's room; (10) a housemaid's room; and (11) store room. Dr. Robinson showed that these two additional theatres would admit of a throat and ear department being established and also enlargement of the eight old wards which would be necessary in the future. Mr. Samuel Storey moved a vote of thanks to the donors, which Mr. T. R. Blumer seconded.

Scotland.

Centenary of the Morison Lectureship.

The centennial course of the Morison lectures on mental diseases and disorders of the nervous system, founded in 1823, will be delivered in the Royal College of Physicians, Edinburgh, on Monday, Tuesday, and Wednesday, October 15th, 16th, and 17th, at 5 p.m., by Dr. Alexander Blackhall-Morison. The titles of the lectures will be respectively: A century of neurology—the instrument of mind; A century of psychology—the mind; A century of psychiatry—the mind diseased.

The Chair of Medicine at St. Andrews.

Dr. Adam Patrick has been elected by the University Court of St. Andrews to succeed Professor Stalker in the chair of medicine in the University of St. Andrews, and the directors of the Royal Infirmary, Dundee, have appointed him an honorary physician. Dr. Patrick, who is at present assistant to the professor of medicine in the University of Glasgow, was educated at that University, and graduated M.A. in 1904, M.B., Ch.B. in 1908, and M.D. (Bellahouston gold medal) in 1913. He holds the appointment of dispensary physician to the Glasgow Western Infirmary, and was formerly consulting physician to the City of Glasgow Fever Hospital and visiting physician to Bellahouston Hospital, Glasgow. During the war he held a commission in the R.A.M.C., and was for three years a specialist in bacteriology in Malta. He was honorary secretary of the Section of Medicine during the Annual Meeting of the British Medical Association at Glasgow in 1922. The St. Andrews University Court, in accepting Professor Stalker's resignation, has placed on record its high appreciation of his distinguished services during twenty-five years' occupancy of the chair.

New Professorial Chair at Glasgow.

Until now the work in forensic medicine and public health in Glasgow University has been carried on in one department as one professorial chair. With the great advances of recent years in public health and preventive medicine, the creation of a new chair in these subjects has become necessary. The institution of this chair has been under consideration for some time, but through the generosity of Mr. Henry Mechan it has now been established, and will be known as the Henry Mechan Chair of Public Health. The University Court of Glasgow has appointed as its first incumbent Dr. John Ronald Currie, at present Professor of Preventive Medicine in Queen's University, Kingston, Ontario—a post he has held only a few months.

Professor Currie had a distinguished career as a student in various universities. In 1891 he graduated M.A. at Edinburgh University, and thereafter proceeded to Lincoln College, Oxford, with a scholarship. He took a first class in classical honour moderations, and was presented to an exhibition. He graduated B.A. there in 1896, and M.A. in 1910. His medical education was obtained in Glasgow University, where, after a course of much distinction, he qualified as M.B., Ch.B. with commendation in 1898, and, in 1910, M.D. with high commendation. After a year's training in the Glasgow Royal Infirmary as resident physician and surgeon he took up medical practice in Birmingham, and while there he took the D.P.H. in that University. He returned to Glasgow and held a resident appointment in Belvedere Fever Hospital under the Glasgow Corporation. From this period his work has been confined to preventive medicine. In 1906 and 1907 he acted as M.O.H. for the counties of Stirling and Dumbarton in the absence of Dr. John C. McVail. Thereafter he held in succession similar posts in the city of Chester and in the counties of Fife and Kinross. In 1912 he entered the service of the National Insurance Commission in Scotland, where he remained, except for a period of three years' war service, till 1919, when he passed into the service of the Scottish Board of Health. In August of last year he was appointed Professor of Preventive Medicine in Kingston, Ontario. He has at various times contributed largely to medical literature, especially on public health subjects, and he is the author of several exhaustive reports on similar matters under Government departments. He was responsible for the history of medical recruiting in Scotland during the war, entitled *The Mustering of Medical Service in Scotland*, which was published in 1922, and reviewed in our issue of January 6th, 1923 (p. 24).

Ireland.

Ministry of Health in the Irish Free State.

Arising out of a discussion in the new Dail on the appointment of Ministers, Sir James Craig, M.D. (Dublin University), expressed much regret that nothing had been said about the creation of a Ministry of Health. The medical profession, at all events, had been looking forward with some hope that in the new appointments to be made by the present Dail a Ministry of Health would be among the ministries formed. He had not urged this matter very strongly because of the expense connected with it. It was not desirable to multiply the number of ministries, but, as he said on a past occasion, surely the health of the people was of more importance than the fish in the rivers and in the seas, for the protection and improvement of which a ministry had been established. It was generally realized, at all events, that they could not have a healthy population if the health of the people was not looked after, and he said deliberately that the public health of the country was in a very serious condition. Sir James Craig added that he was not going to press this matter at the present moment, because he felt like an orphan in that assembly. He was not going to press the President to add to his ministries that other Ministry of Public Health, but he was going to suggest that the Government should do the next best thing, and that a Public Health Department should be formed within the Ministry of Local Government, and that there should be a parliamentary secretary in the Dail who would be responsible for the Public Health Department of the Government. Sir James Craig then expressed his admiration for the work done as Minister for Local Government by Deputy Blythe, who had made himself thoroughly acquainted with the matters relating to the public health of the country, and proposed to introduce a Public Health Bill, which was one of the bills delayed owing to the work that the Government had to do before the dissolution of the last Dail. It would be a difficult matter to get a Minister able to follow in the footsteps of Deputy Blythe. Perhaps the President would give some encouragement by saying that the Government would form such a department within the Ministry of Local Government, and that some deputy would be responsible for public health matters in the Dail.

Mr. Ernest Blythe (late Minister of Local Government), in reply, said, with regard to the remarks of Deputy Sir James Craig, he thought it should be clear there could be no question of having a Department of Public Health and a Department of Local Government at the same time. The Department of Local Government was really, as far as it went, a Department of Public Health. Nearly all the activities of that department, except roads, were concerned with public health. Housing and the relief of the necessitous were really matters for a Department of Public Health. The medical charities or the provision of medical relief was also a matter for the Public Health Department. In the Ministries Bill, which it was not possible to bring before the Dail, he believed it was the intention that the name should be Department of Local Government and Public Health, and that the National Insurance Commission would come in under the department. It would then be merely a matter of choosing a name. It could be the Department of Health, or the Ministry of Health, or any other name that was suggested. It was intended really to give a substance to the Department of Health, with one or two functions added to it for administrative convenience.

Early Treatment of Mental Disorders.

In his report for the year 1922, Dr. S. J. Graham, medical superintendent of the Belfast District Asylum, emphasizes the value of early skilled mental treatment in hospital in improving the chances of recovery from mental disturbances. He remarks that the Lunacy Law, as applicable to Ireland and as at present framed, does not encourage early treatment. It is illegal to receive as voluntary boarders early uncertifiable, mentally afflicted patients, also certifiable harmless patients (who are willing to submit to such treatment) without certification. Dr. Graham maintains that if the lunacy laws were amended to meet such conditions, the stigma of certification, so much dreaded by patients and their relatives, would be removed. This would enable the patients to be advised and encouraged to submit to such treatment and so facilitate early recovery. He expresses his warm approval of the "Voluntary Boarders" section of the Mental Treatment Bill, recently introduced into the Imperial Parliament by Lord Onslow, and urges that all the privileges thus conferred should receive the attention of the Government of Northern Ireland, so that the mentally afflicted in Northern Ireland may receive the same benefits as those mentally deranged in England and Scotland.

Correspondence.

THE SOCIAL ASPECTS OF TUBERCULOSIS.

Sir,—In the course of an exceedingly interesting opening paper on "The social aspects of tuberculosis, with special reference to its infectivity," which appears in your issue of September 22nd, there occurs, on page 513, a statement which Dr. Jane Walker will probably pardon me for referring to. The point under discussion is the occurrence of massive infection and the bearing which overcrowding in smaller-sized houses has on the frequency of this. The sentence reads:

> "Several points are emerging which seem to show that overcrowding even is not quite so responsible for cases of tuberculosis as we thought it was. For example, whether people live in one room or in six, as far as Glasgow is concerned, does not appear to make much difference in the incidence of tuberculosis."

I am not quite sure whether Dr. Walker has based this view on some statement in one of the annual reports issued by this department or on the rates contained in a paper on "The house as a contributory factor in the death rate," issued about ten years ago, but it may be well if I quote from both sources in order that they may be the more readily compared. The house distribution of the cases is taken from the notifications of 1920-23, while the death rates are calculated on a standardized house population as described in the paper on "The house, etc.," above referred to.

Notifications of Pulmonary Tuberculosis, 1920–23: Percentage Incidence according to Size of House.

	No. of Cases.	Per Cent.	Percentage of Population Living in Houses of Sizes Quoted.
One apartment	1,123	17.95	12.9
Two apartments	3,121	49.53	48.5
Three apartments	981	15.71	21.0
Four apartments and upwards ...	526	8.41	16.0
Institutions	485	7.75	
	6,239	99.80	

The indication of this table is that nearly 13 per cent. of the population living in one-apartment houses contributed nearly 18 per cent. of the cases, while 21 and 16 per cent. of the population living in three- and four-apartment houses contributed 16 and 8 per cent. respectively. Approximately one-half of the population living in two-apartment houses supplied one-half of the cases. The fact that a smaller proportion of the population living in one-apartment houses should contribute twice as many cases of phthisis as a larger percentage of the population living in four apartments and upwards contains the elements, at least, of a suggestion that the size of the house does play some part towards producing mass infection and increased incidence.

The extent of this, however, can only rightly be measured when corrections have been made for age and sex distribution, and a rearrangement of the figures given on page 20 of the paper already referred to shows that while the death rate from all causes in four-apartment houses equals 50 per cent. of the deaths occurring in one-apartment houses, the phthisis deaths in four-apartment houses form only 32 per cent. of those occurring in one-apartment houses. Is it not reasonable to attribute some part of this relatively greater incidence of phthisis in one-apartment houses to the element of mass infection which Dr. Walker is considering?

	Calculated Death Rates.		Taking 1-Apartment Rate as 100.	
	All Causes.	Phthisis.	All Causes.	Phthisis.
One apartment ...	20	1.88	100	100
Two apartments ...	17	1.36	85	72
Three apartments ...	13	0.87	65	45
Four apartments ...	10	0.61	50	32

—I am, etc.,

Sanitary Chambers, Glasgow. Sept. 29th. A. K. Chalmers.

THE SHAW-MACKENZIE BLOOD TEST IN CANCER.

Sir,—An interesting and instructive case which demonstrates the value of the blood test in cancer, introduced by Dr. J. A. Shaw-Mackenzie, in doubtful cases, came under my observation recently. It was that of a friend whose family history in regard to cancer is not a good one. His maternal grandfather died of cancer of the throat, two aunts died of cancer (one of cancer of the uterus, the other of cancer of the bowel), and a sister died of cancer of the bowel.

The patient's age is 71 years. He had always enjoyed good health until June, 1923, when he began to suffer from pain in the chest and epigastric region, with loss of appetite, discomfort after food, and occasional sickness. This continued for four weeks, when the pain became acute. He was under the care of Dr. G. de Bec Turtle, who was of opinion that the patient was suffering from duodenal ulcer, but in view of the family history, age, emaciation, and illness of the patient, it was agreed, in consultation, that the condition could be better investigated in hospital. Examination of the stomach content in hospital showed the presence of achlorhydria, while *x*-ray examination seemed to suggest something more than simple ulcer. Considerable improvement and freedom from pain followed dieting, treatment, and rest in bed. But in the uncertainty of the diagnosis the option of an exploratory operation was given. This the patient was unwilling to undergo, and after seventeen days in hospital he returned home. On July 16th, by request, I visited the patient, with Dr. Shaw-Mackenzie and Dr. Turtle. The patient was in bed, and appeared to be very ill. On examination of the abdomen there was some fullness in the epigastric region with tenderness on gentle pressure. There was still uncertainty of the condition, and it was decided to examine the blood. For this purpose 5 c.cm. was taken. The subsequent report by Dr. Shaw-Mackenzie was that he had tested the serum, found the reaction absolutely "negative," and that anything more than simple ulcer could, for the time being, be definitely excluded.

On September 19th the patient was seen again. He had been out and about. On examination there were no physical signs. He appeared to have regained his former good health and spirits, had increased in weight, and had resumed his ordinary light diet. A specimen of blood was again taken and examined, with the same result as before—namely, that the blood reaction was normal.

The result in this case fully supports the clinical value of this new blood test reported in some 136 serums examined (including those from obscure abdominal cancerous, non-cancerous, and normal) published by Dr. Shaw-Mackenzie,[1] and noted in a further series of 53 cases.[2] In a more recent series of 32 cases, similar results have been obtained. Up to the present time, in a total of 221 serums examined, the method has proved correct in 212, or 95.5 per cent. The errors were associated chiefly with diabetic, tuberculous, sarcomatous, and febrile conditions. These difficulties met with were indicated in the first published series.

My object is to draw attention to the usefulness of this method, by which it has been possible to differentiate cancer of internal organs from other non-cancerous conditions in the majority of cases, and in obscure cases to exclude the presence of cancer. Most of these blood test results I have witnessed myself in the laboratories at King's College during the last two and a half years, a line of promising research to which I drew attention in the British Medical Journal of February 25th, 1922.—I am, etc.,

W. J. Simpson, M.D., F.R.C.P., Professor of Hygiene, University of London, King's College.

London, W., Sept. 28th.

MEDICAL PRACTICE IN NORTH AMERICA.

Sir,—The "Note on Medical Practice in North America," by Dr. H. Cecil H. Bull (September 22nd, p. 538), has awakened in me a sympathetic chord, for I, too, know the North American continent at first hand and can fully support all Dr. Bull has to say regarding medical education in those great countries. My experience of Canadian methods of teaching the medical student is confined to Montreal, in the wards and lecture rooms of the Ross Memorial Hospital and the General Hospital. Both of these institutions offer unrivalled opportunities for clinical work, but one could not but be surprised at the absence of students from out-patient clinics and "receiving rooms," while at lectures and surgical demonstrations students crowded in.

At the General Hospital, Montreal, there is an excellent "fracture clinic," in charge of a surgeon who gained his first experience with Sir Robert Jones at Liverpool, and is an enthusiast over his work; yet even here the paucity of students attending was remarkable.

So far as the Western States of the Union, and the prairie provinces and British Columbia in Canada, are concerned I must say that the average general practitioner is a long way ahead of his prototype in this country. And the reason of this, in my opinion, is the system of "open" hospitals that pertains in those parts. The hospitals there are open to every registered medical man, who can send his patients, both medical and surgical, into these institutions, and can do his own surgical work there. The result is, while one naturally comes across some poor operators, the majority of general practitioners tackle all operations, and tackle them well. No doubt this system of the "open" hospital has its disadvantages, but it does the general practitioner a great deal of good, in that it gives those with surgical leanings every opportunity to perfect themselves in the science and art of surgery. Not so in England, where our pernicious system of staffing our hospitals is not always productive of the best surgical—and medical—talent.

[1] *Lancet*, 1922, ii, 759.
[2] *Med. Press and Circ.*, 1923, i, 9.

As to the quackery that flourishes in both Canada and the U.S.A., I was informed by one of the leading medical men in Seattle, Oregon State, that there were men in actual general medical practice in Seattle, describing themselves as "hydrotherapeutists," whose sole claim to medical knowledge was the fact that they had been attendants at Turkish baths, and who were permitted by the laws of the State to attend women in childbirth and also issue death certificates.—I am, etc.,

VINCENT P. NORMAN,
F.R.C.S.Edin., D.P.H.Lond., L.M.C.Canada.

Bradford, Sept. 24th.

BETEL CHEWING AND CANCER.

SIR,—Dr. Archibald Leitch, in his paper on the "Causes of cancer" (BRITISH MEDICAL JOURNAL, July 7th, 1923), says, with regard to betel chewing as a possible cause, that "the number of cases of cancer of the cheek actually observed by any one medical man [in Southern India and the Philippines] seem to be surprisingly few," and goes on to state that this "should make us cautious in accepting this [betel chewing] as an instance of cancer due to tobacco, or *even as an example of an irritation cancer at all*" (italics mine).

Now, I with many other surgeons in Ceylon firmly believe that betel chewing furnishes as good an example of irritation cancer as one could wish to see. Whatever may be the experience of medical men elsewhere it cannot rightly be said of Ceylon that "the number of cases of cancer of the cheek seen by any one medical man are surprisingly few"—that is, by any one medical man with full opportunities to judge; for these cases gravitate to the large hospitals, and the surgeons of these institutions, rather than general practitioners, have the best chance to form an opinion of their frequency.

I am sorry I cannot lay my hands on figures just now, but I do not think I exaggerate when I state that the cases of cancer of the cheek coming to the General Hospital, Colombo, in any one year are at least as numerous as the number of weeks in a year; and this despite the dread the people of this country have of operations and the breezy optimism of *vedaralas* who keep promising cures until the patient is dead.

Even so, it may be argued, the number is very small compared with the thousands who indulge in betel chewing. Still it is numerous enough to suggest more than a mere coincidence and to drive home a strong conviction. Why deny to betel chewing what one is so ready to credit to paraffin and arsenic? Are not cases of cancer due to these also relatively few?

Cancers of the cheek are among the commonest malignant growths encountered in Ceylon; they are as common in women as in men, betel chewing being a luxury not limited to sex.

Dr. Leitch very rightly draws attention to the fact that "the betel preparation is a crude mixture of areca leaves [I presume he means either betel leaves or areca nut], lime, and probably other substances as well as tobacco, and the effect of these accessories cannot be discounted." I am inclined to think it is the lime that provides the continuous irritant, though the potency of the crude tobacco should not be under-estimated. Cancer of the cheek as one sees it here almost invariably begins as a leucoplakia or a roughening of that part of the buccal mucous membrane that lies in contact with the molars and pre-molars, which are always more or less discoloured and coated with rough deposits of tartar and lime providing a sandpaper-like surface. One has but to see a series of such cases to be convinced that here we have cause and effect.

Carcinoma of the penis is another astonishingly common form of malignant disease in this country. Between June, 1911, and June, 1915, no fewer than 91 cases were operated on by me at the General Hospital; and I was but one of three surgeons. Here the specific irritant seems to be the pent-up smegma, caked and disintegrated; for congenital phimosis is the almost invariable accompaniment. Carcinoma of the penis is never seen in Moors who practise circumcision; it is most common among Cingalese cultivators. Here, too, the disease begins as a leucoplakia of the glans and preputial mucous membrane, passing on to roughening, erosion, and craggy ulceration or exuberant growth.—I am, etc.,

Colombo, Sept. 6th. R. L. SPITTEL.

ETHER *VERSUS* CHLOROFORM.

SIR,—Dr. C. F. Hadfield's reply (September 22nd, p. 543) to my letter is very welcome, and makes it clear that the correspondence ought to be prolonged a little, because open ether and its modifications is supposed to ensure a factor of safety for the average patient when administered by the average practitioner. In such circumstances the views of the average surgeon are bound to come in. The question centres round muscular relaxation, and until this is measured by some standard method the facts will never be known and we cannot profitably argue about them. As Dr. Hadfield says, "many surgeons are tonometers of excessive delicacy"—especially on a bad day! The order of onset of relaxation in the sets of muscles will require to be determined both for ether and for chloroform. Personally, I see no objection to using a tonometer in or near the wound if it can be sterilized and does not get in the way, and as this would render the study more scientific it ought to be done.

I understand, for instance, that the combination of morphine and chloroform was abandoned by anaesthetists long ago as unsatisfactory and dangerous, as it produces in varying degree a condition of narcosis with muscular rigidity and increasing cyanosis from laryngeal spasm and slowed respiration, relieved generally by inspiratory stridor. In this condition the patient may appear to be deeply anaesthetized, but is anything but ready from the surgical point of view, being, as Dr. Hadfield says, "not *under* any anaesthetic," but rather in a transition stage of a sequence. Usually it is an emergency case in which morphine has been given, unknown to the anaesthetist, for pain or transport; given empirically, and not according to body weight. If the induction has been by ether or ethyl chloride, or if ether continues the sequence and the patient is an alcoholic or otherwise not a suitable subject for ether, the dilemma may be a very real one. Chloroform intensifies the symptoms already detailed and the respirations become slowed and ultimately cease. The way out appears to be to increase the concentration of ether vapour by the use of apparatus or to add a small quantity of a third anaesthetic such as ethyl chloride. A tonometer in these circumstances would further indicate the prevailing state and show whether the increasing concentration of ether was likely to be sufficient. But there is such a large personal factor in every case of general anaesthesia that one anaethetist will pass to the later stages in one way and another in another way according to the case.

Dr. Hadfield mentioned a point I left out. That bronchitis may be due to the disease and also to the operation, no one will deny. There is a difference in this respect between the upper and the lower abdomen, and between septic and aseptic cases, but even making these allowances the bronchitis rate in abdominal cases generally seems to me to be greater now than it used to be when chloroform was used more frequently.—I am, etc.,

Aberdeen, Sept. 25th. G. H. COLT.

TESTS FOR DRUNKENNESS.

SIR,—In your issue of September 15th Dr. L. A. Parry (p. 487) writes to seek information on the question "Drunk or sober?" In my little work *Practical Forensic Medicine*, published by Lewis of Gower Street, I deal with the question at some length. The book was killed, I think, in the war, because I have heard nothing of it since, and it deserved death, being sadly out of date. If Dr. Parry will borrow the work from the British Medical Association library (I do not advise him to buy a copy) he will find in it the result of twenty years' experience in the subject.—I am, etc.,

London, W.C., Oct. 1st. GRAHAM GRANT.

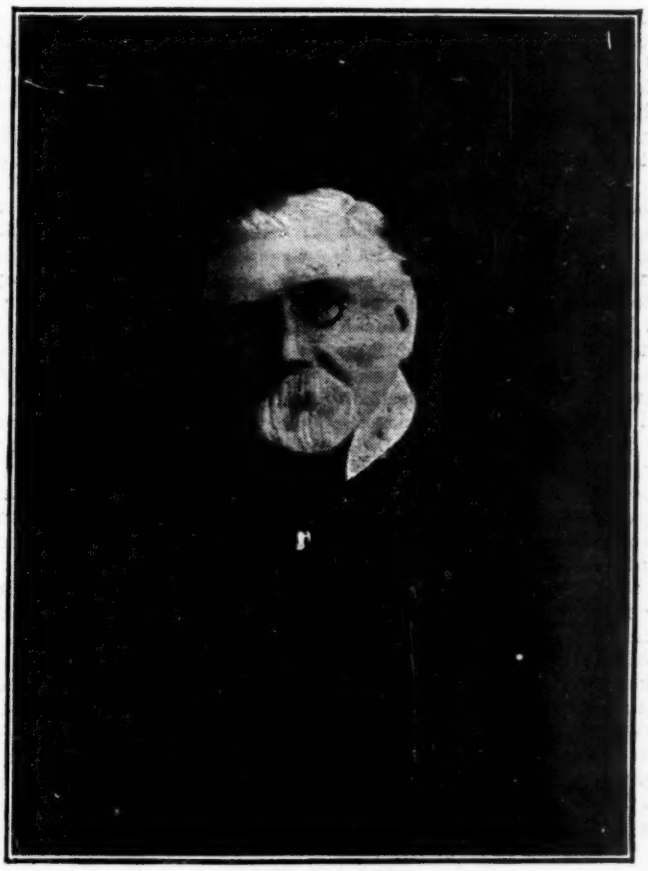
Obituary.

SIR JOHN HALLIDAY CROOM, M.D., LL.D., F.R.C.P., F.R.C.S.EDIN.,

Emeritus Professor of Midwifery, University of Edinburgh.

WE regret to announce the death of Sir John Halliday Croom, Emeritus Professor of Midwifery in the University of Edinburgh, who died on September 27th in his 77th year, within four months of the passing of his colleague and life-long friend, Emeritus Professor John Chiene. The University of Edinburgh has thus lost within a brief space of time two of those former professors who in their day were amongst the giants of the University life.

Sir Halliday Croom retired from his University chair and from practice a little over two years ago, and since then his health had been increasingly unsatisfactory. Idleness sits irksomely on men who have spent lives filled to the brim with active work, and retirement is not infrequently the herald of the last phase. So it was with Croom when cut off from the teaching which was as the breath of life to him. A severe attack of influenza greatly weakened him last winter, and an attack of bronchitis in the beginning of this month was followed by a gradually increasing congestion of the lungs, to which he succumbed peacefully on Thursday last. The news of his death will be received with a sense of personal regret by many hundreds in the medical profession throughout the whole civilized world, who were students under him. No teacher in Edinburgh held a surer place in the affections of his students than Sir Halliday Croom, and when it is realized that at the time of his retirement he had been teaching in the Edinburgh School for the long period of fifty years, the number of students who passed through his hands will be imagined.



SIR HALLIDAY CROOM.

Photograph by] [*Elliott and Fry, Ltd., London.*

John Halliday Croom was born in 1847 at Sanquhar, Dumfriesshire, where his father, the Rev. David Croom, was United Presbyterian minister. While he was yet a boy, his father was called to Lauriston Place U.P. Church, Edinburgh, and John Croom and his brothers received their early education at the Royal High School of Edinburgh. Subsequently he proceeded to the University of Edinburgh, where he graduated after a distinguished course in 1868. After some months spent in post-graduate study in Paris and London, he settled as a general practitioner at Brougham Place, Edinburgh; but success came to him with both hands so full that he soon moved to the more fashionable Hope Street, and thence ultimately to 25, Charlotte Square, which was his residence for many years. From the outset he engaged in teaching, being instinctively drawn to a form of work for which he had very outstanding qualifications. After a year as university assistant to Professor Laycock in the Chair of Medicine, he was appointed assistant to Professor A. R. Simpson in the Chair of Midwifery, a post which he held until 1877. He then began lecturing on his own account in the Extra-mural School at Minto House, where for many years his summer class on midwifery and gynaecology was a regular and brilliant feature of the school. As a lecturer his popularity was immediate and sustained, and few students in Edinburgh during the twenty-five years in which he lectured in the Extra-mural School failed to take out his three months' class in addition to the regulation six months' course at the University. The secret of his success and popularity as a lecturer was never far to seek. He was a brilliant speaker, nervously energetic in manner, endowed with a gift of the most vivid narration illuminated by a whimsical and sparkling humour; and his lectures were always essentially practical. No man could bring home an important lesson in more telling fashion, or in a single never-to-be-forgotten phrase throw such a flood of light on his subject. Many hundreds of Edinburgh men all over the world are at this moment carrying in their minds as guiding principles in their midwifery some of his epigrammatic aphorisms. Furthermore, he never spared himself in his teaching. It was throughout his whole life his first object and his dearest interest, and his students never failed to realize that, and to listen with alert responsive interest and quickened enthusiasm. In 1905 he succeeded Sir Alexander Simpson in the University chair, which he adorned for sixteen years, and where he endeared himself to succeeding "generations" of students. His last lecture was an occasion of great sadness not only to himself, but also to the students, who realized that it was the last appearance of one whose fame as a teacher had become a great tradition of their school.

For some years Croom carried on a large general practice, but as gynaecology developed more and more as a specialty, and as his knowledge and aptitude for it became more and more recognized, he was gradually compelled to give up all general work and devote himself exclusively to midwifery and gynaecology. He was early appointed to the hospitals. He became assistant gynaecologist to the Royal Infirmary in 1883 and succeeded to the charge of wards two years later. He held his wards for the full period of fifteen years, retiring in 1901, but returning for a period of one year between his appointment to the combined University chair and the subsequent formation of a separate lectureship in gynaecology. In 1901 he was appointed consulting gynaecologist to the Royal Infirmary. On the Maternity Hospital staff he was appointed an ordinary physician in 1877, and there he served for a period of twenty years. In 1899 he was appointed consulting physician to the hospital. In 1905, when he was appointed Professor of Midwifery, he returned to the staff of the hospital and again served on it for a further sixteen years. Throughout this long period of years his interest in the hospitals never flagged, and it is questionable if he was ever quite so happy as when giving some of his inimitable practical cliniques in their wards. It is interesting to note that he was the originator of clinical teaching in the Maternity Hospital, and that in introducing what was then regarded as a novelty of dubious propriety he had to carry his point against considerable opposition. It is not too much to say that in so doing he lifted the science and art of Midwifery out of the Cinderella-like position which they had previously held amongst the great sister branches of Medicine

and Surgery, and that the obstetricians of to-day owe no small debt of gratitude to his pioneer work in this respect.

In practice Sir Halliday Croom's success was conspicuous. He was called far and wide as a consultant and operator—to Rome, Paris, London, and all over Great Britain—while his fame as an obstetrician attracted many distinguished patients to Edinburgh who sought the advantage of his services. In spite of the claims of such a practice, however, and of his almost passionate absorption in teaching, he found time for much professional writing. His papers were nearly all clinical and practical, and they range over almost the whole of practical midwifery and gynaecology. His observations on *The Bladder during Parturition* and his *Handbook of Minor Gynaecological Operations and Appliances* were both published in book form, and the latter had a great success, running through several editions in this country and in America. In all he wrote some hundred articles, addresses, and monographs, all of which had their special points of interest and importance. Amongst the more notable are those on "Retention of Urine in the Female," "The Causation of Face Cases," "The Systematic Use of Antiseptics in Midwifery," "Dysmenorrhoea and Sterility," "The Diagnosis of Early Extra-uterine Gestation," "Caesarean Section in Eclampsia," "Mittelschmerz," "Senile Uterine Catarrh," "Exophthalmic Goitre in relation to Pregnancy and Labour." These are but a few amongst many, but they serve to show the catholicity of his observations and writings.

Sir Halliday Croom was a Fellow of the Royal Society of Edinburgh, of the Royal College of Physicians and of the Royal College of Surgeons of Edinburgh; and it was in 1902 when he was President of the latter College that he received the honour of knighthood. He was throughout his whole professional life a devoted Fellow of the Edinburgh Obstetrical Society, and one of the most regular contributors to its debates. The fact that he was elected to the presidential chair of the society three times shows the position which he held in the hearts of his colleagues. His eminence in his specialty led also to his election as President of the British Gynaecological Society, whilst among the foreign societies of which he was appointed an Honorary Fellow were the American and the Belgian Gynaecological Societies. He was President of the Obstetrical Section of the British Medical Association Meeting at Carlisle in 1896. Dublin University conferred upon him its Honorary M.D., while on his retirement his Alma Mater sealed her acknowledgement of his life-long services by making him an Honorary Doctor of Laws amid a scene of unequalled spontaneous enthusiasm on the part of the student audience.

Amongst his many services to the profession and to the cause of midwifery must not be forgotten his work in connexion with the Central Midwives Board for Scotland. He gave the full weight of his influence and authority to the movement which eventuated in the passage of the Midwives Act for Scotland, and he was unanimously appointed the first Chairman of that Board, serving on it from the time of its inception in 1915 until 1920.

Sir Halliday Croom married in 1875 Miss Anna Isabella Walker, and one son and three daughters were born of the marriage. His wife died in 1898, and this sorrow was a great blow to him. His eldest daughter ably took up her mother's duties in the household and acted as her father's hostess for many years until her marriage to Dr. A. J. Beattie. Her premature death in 1913 was therefore a second very severe blow which aged him considerably in the eyes of his friends. The two younger daughters and his only son survive, the latter, David Halliday Croom, being a well known physician in Edinburgh.

Sir Halliday Croom was a man of extraordinary personal attractiveness, and of an almost womanly charm which was so spontaneous and innate as to elude any attempt at analysis. His tall graceful figure, always immaculately clothed, was one of the best known public figures in Edinburgh. His courtly and aristocratic appearance were but the outward marks of a nobly sensitive nature. He was a man of extraordinary courtesy to rich and poor alike, quick in sympathy with anything in the nature of suffering, hating cruelty, hypocrisy, and disloyalty above all things. His sensitiveness made him somewhat quick in temper and impulsive in action, but his wrath was never long sustained because his nature was essentially generous. His vivacious sense of humour was delightful, and found expression in whimsical and unexpectedly forcible phrases which gave extraordinary point to his teaching and to the stories with which he used to delight both his classes and his friends and guests. He was an inimitable and most hospitable host and enjoyed nothing better than having his friends round him at dinner. A true son of the manse, he never lost the impress of the early days and the early teaching. He was a man of deep but simple beliefs, to which he clung with unalterable loyalty. The affairs of the United Presbyterian and subsequently of the United Free Church always claimed a generous share of his interest, and like a true Scot he loved nothing better than a good-going theological discussion.

Sir Halliday Croom was buried in the Dean Cemetery on Saturday, September 29th, in the presence of a large concourse of his fellow citizens, representing every class and every profession and activity, and on the Sunday a largely attended memorial service was held in Lauriston Place United Free Church, his father's old congregation, in which he himself had served as an elder for many years.

Dr. JAMES HAIG FERGUSON (Edinburgh) writes:

I have been asked as a former assistant of the late Sir Halliday Croom to give a short appreciation of my old chief, and it is with a full heart that I do so. I would recall him as a teacher, as a physician, as a man, and as a valued friend. Sir Halliday Croom's name will go down to posterity as that of a great teacher. As such he was in the first rank, and it is safe to say that no more successful or popular teacher, whether in the lecture room or by the bedside, has existed in the Edinburgh Medical School in this generation. His didactic method was always impressive, his enthusiasm was contagious, and his unfailing sense of humour and lightness of touch, coupled with a wonderful vivacity, all combined to make his lectures telling and effective. Teaching was ever a joy to him; it seemed to come to him so easily, but only those behind the scenes knew the infinite trouble he took to prepare his systematic lectures even down to the smallest details. He put his whole mind and soul into their preparation and delivery. Even in his younger days at the end of a lecture he was often worn out by his efforts, though it all appeared so spontaneous and easy to his hearers at the time. While often physically exhausted by his teaching, he was mentally exhilarated and he often used to say that he seemed to absorb fresh mental stimulus and vitality from the crowded benches of eager and enthusiastic young minds whose attention he never allowed to flag for an instant. His illustrations and apt remarks were always striking, and culled as they were from a ripe experience they have become (many of them) aphorisms indelibly fixed in the minds of the thousands who, in the course of his fifty years of teaching, have had the privilege of passing through his hands. In truth he had the great gift of making the dry bones live. Nothing was such a joy to him as the appreciation of his students, and the pleasure which this gave him brought out all that was best in the man, and showed the unaffected simplicity of his real nature.

Croom's enthusiasm for his department has undoubtedly done much to raise obstetrics and gynaecology to the high place they now hold in medicine and to rescue them from the neglected and somewhat despised position to which in times past they were apt to be relegated. As a young graduate and while still assistant to the late Sir Alexander Simpson he rapidly acquired a large and lucrative general practice. Gynaecology was then in its chrysalis stage, but as it gradually emerged (and Croom was one of the pioneers who promoted its development) he gradually dropped general practice. He used to say that he regarded this preliminary experience as having been of great value to him in after life. Few certainly could deal with patients more successfully and tactfully than he did and he seemed to have an intuitive knowledge of their thoughts and feelings which at once put them at their ease and won their confidence and regard to a remarkable degree. He also quickly gained the confidence of the profession by his skill

as an operator, and consulting work came to him rapidly from far and near. What between his teaching, his hospital work, and his consulting practice, it is difficult to understand how he managed to overtake it all, the more so as he always regarded his teaching and hospital duties as having the first claim.

Croom possessed an extraordinary clinical instinct (the result no doubt of long experience) which seldom failed him and which greatly impressed his pupils. His numerous contributions to literature were of a high order and always attracted attention. He inherited high traditions as the son of saintly parents whom he revered. By nature he was extremely sensitive, which tended to make him shrink from personal contact with unpleasant and disagreeable matters, but at the same time enabled him to get into touch very easily and readily with the minds of others. He delighted in friendly argument and would often take up and even appear warmly to defend some thesis, just for the pleasure of the discussion, while all the time his sympathies were for the other side, as in the end he would laughingly admit. His courtly and dignified bearing always attracted attention and gave him the distinguished appearance which is associated with the polished and punctilious gentleman of the later Georgian era, reminding one of the beloved Colonel Newcome, who so worthily represented the best elements of that age.

He was, moreover, one of the kindest of men and at the same time one of the most unostentatious. Not even his most intimate friends knew the extent of his charity. He was always touched by genuine distress and misfortune, and though sometimes deceived by unworthy persons this never embittered him. One incident serves to illustrate his kindness of heart. On one occasion in his younger days he had been called out in consultation to a poor woman *in extremis* who was also in destitute circumstances. There was no clothing for the baby and Croom promptly divested himself of one of his own warm garments to wrap the child in, returning home in the small hours of the morning shivering with cold. He was a deeply religious man, albeit somewhat sensitive in speaking of such matters save in moments of expansiveness to his most intimate frends. He had a horror of hypocrisy and cant and his religion was of the most practical kind. He had two great sorrows—the death of his charming wife twenty-five years ago, and that of his eldest daughter fifteen years later. Though a distinctly sociable man and an ideal and most hospitable host in his own house, he did not go out much into society, and it was difficult to persuade him to leave his happy domestic circle in the evenings. His home life and his work were all-sufficient for him. He was, however, always accessible to anyone seeking his advice and never seemed too busy to listen sympathetically.

When he retired from the Chair of Midwifery in the University he keenly felt the giving up of his work and the termination of his teaching—all the more so as he had few interests outside his profession. Reading was his chief pleasure and he was catholic in his tastes. He took great delight in the visits of his friends. His health, however, became feeble and sapped his former energy, and this unfortunately prevented his devoting himself to writing. Had he been more vigorous, it is not unlikely that he would have left behind him some memoirs, which would certainly have been of great interest. But alas, fate decreed otherwise. His life's work was accomplished; he was ready for his summons; and like his great prototype he reverently answered "Adsum" to the Call. He leaves behind him a record of good work well done, and the affectionate remembrance of a host of friends. "Clarum et venerabile nomen."

Dr. H. J. F. Simson (London) writes:

To those of us who were privileged to know Sir Halliday Croom as a teacher, counsellor, and friend, the news of his death came with a peculiar sadness for ourselves, not perhaps unmixed with gratitude for him. Twenty-five years ago Croom was almost everything that a young assistant or house-surgeon looks for and hopes to find in his chief. He was a man of indescribable charm of manner; a joyous enthusiasm in his work stimulated those who came in close contact with him. A real Scottish humour with a repertoire of real Scottish stories made an invitation to dine with him an event not lightly to be disregarded, and above all he had an amazing courtesy which made one love to meet him and talk with him. To all who were closely associated with him he preached courtesy.

Twenty-five years ago the sudden and quite unexpected death of Mrs. Croom, one of the most charming and lovable of women, left him bereft of nearly all but his unfailing courtesy. From that day it was as if his outlook was fixed on a day which was hidden from him, but which we, alas! now know was September 27th, 1923. There was one memorable occasion when he was his old radiant self again. On his retirement from the chair of obstetrics two years ago his old assistants and house-surgeons dined with him, and he was once more the chief amongst a band of men whose careers he had always followed with an intense personal interest. When in his prime he was working in Ward 28 at the Royal Infirmary. It is impossible to imagine a happier corner in any hospital than Ward 28. Those were the days when gynaecology was still considered a physician's business. One side of the ward was occupied by Dr. Affleck's patients and the other by Dr. Croom's. There were perhaps no two men at the Royal more dissimilar than Croom and Affleck, except in one particular—they seemed to vie with each other in unfailing courtesy, and the link that bound us all together was Sister Stewart.

Much has been written and said about Croom's success as a teacher; "a peerless teacher" was a term often applied to him, and in this connexion it is interesting to know that his lectures were all extemporary. It was his habit to prepare his lecture carefully and write it out fully, but only on one side of the paper; on the blank page he would write two or three words in blue pencil which would rapidly recall the written page to his mind. When he lectured he always put on an old-fashioned swallow-tail coat, the lapels of which he grasped nervously with his hands as he spoke; then suddenly, in order to emphasize some point, the right hand would shoot forward, the first two fingers straight and the third and little fingers bent on the palm: "Gentlemen, let me *implore* you, if you remember nothing else, remember *this*." He was always most particular about his clothes; in fact it was often said that he had a different pair of trousers for each day in the month. The thing he disliked most was untidiness, and the thing he liked most was cleanliness. For the greatest part of his really active life he had a Turkish bath once a week, which recalls to mind an incident he was always fond of relating. In the early days of aseptic surgery, a somewhat famous German gynaecologist came to Edinburgh and dined at Charlotte Square. After dinner the conversation naturally turned to surgery, and the German authority with pronounced emphasis was heard to say, "And on my operation day I always begin by having a bath and put on a clean shirt." "But my dear professor," replied Croom, "I do that every morning."

As a gynaecologist Croom was a pioneer, but his highly nervous temperament and intense sympathy with the suffering were not suited to the strain of surgery in the days when hysterectomy was performed by fixing the stump by steel skewers to the abdominal wall. The anxiety of the after attendance of abdominal operations in those days can hardly be realized at the present day, when an exploratory abdominal operation is considered justified even for diagnostic purposes. As an obstetrician Croom was second to none. Long before the days of the antenatal clinic he used to teach the folly of "the ostrich with its head in the sand hoping for the best." An examination under an anaesthetic was almost a routine procedure at the thirty-sixth week in a primipara. "Leave nothing to chance," and "You can't do more than you can do, but you never know what you can do till you try," were words of advice often on his lips. For graduates of the time of Croom, Edinburgh still contains many friends—but the chiefs are going. Croom's place among them is an enviable one.

The death took place at Macduff, Banffshire, on September 22nd, of Dr. J. I. McArthur, at the age of 71. James Irvine McArthur was educated at the University of Aberdeen, where he graduated M.B., C.M. in 1882. Over forty years ago he went into general practice at Gamrie, Banffshire, where he remained until his retirement some three years ago. Although he had one of the most extensive practices in the county he also superintended the working of two farms which had the reputation of being the best managed in the district. He was medical officer to the Gamrie and King-Edward Parish Councils, and for many years was surgeon lieutenant to the Banffshire Artillery Volunteers. He was a justice of the peace for the county of Banff, and a member of the British Medical Association.

We regret to record the death of Dr. Alexander Reid Stoddart, of Fishergate, York, on September 25th, after a long illness due to war service. He was the eldest son of the late Dr. John Stoddart of Kirkcaldy, Fife, and received his medical education at Edinburgh University, where he graduated M.B., C.M. in 1887; he afterwards studied at Prague and Vienna. After holding the appointment of house-surgeon at Edinburgh Royal Infirmary he went into practice at York in 1891, where he was a successful practitioner and popular with his professional colleagues; some years ago he was elected president of the York Medical Society, of which he was also honorary librarian. He was a member of the British Medical Association. Dr. Stoddart joined the 5th (York) Battalion of the West Yorkshire Regiment in 1896, in which he attained the rank of surgeon major. During the great war he held a commission in the R.A.M.C., and served in France; in 1916 he was mentioned in dispatches. When he returned to York at Christmas, 1918, it was evident that the war had left its mark upon him, and he suffered from ill health up to the time of his death. The funeral service in St. Martin's Church on September 29th was attended by a large congregation, which included most of the medical practitioners in York. Dr. Stoddart is survived by his widow, four daughters, and one son.

We regret to record the death on September 18th, in his 70th year, of Dr. W. H. Smith of Boston, Lincolnshire, the son of Dr. B. A. Smith, who practised for over fifty years at Sibsey. William Henry Smith received his medical education at St. Mary's Hospital, London, where he obtained the L.S.A. in 1876 and M.R.C.S.Eng. in 1877. He was house-surgeon at the Beckett Hospital, Barnsley, and at Hull General Infirmary, before going into practice at Revesby and later at Boston. Dr. Smith was appointed honorary surgeon to the Boston Hospital in 1897, and on his retirement in 1916 was appointed consulting surgeon. During the war he acted as medical officer to the Holden House Red Cross Hospital. He held the appointment of medical officer to the Boston Board of Guardians for thirty-three years. He was one of the oldest members of the Holland Division of the British Medical Association, of which he was chairman for some years, and representatives of the Division attended his funeral. Dr. Smith was also a member of the Panel Committee. He was unmarried.

Universities and Colleges.

UNIVERSITY OF LONDON.

The Vice-Chancellor, on behalf of the University, addressed on September 11th to His Excellency the Japanese Ambassador a letter of sympathy with the Japanese nation in the overwhelming destruction of life and property experienced during the calamitous earthquake. His letter contained the following passage: "We remember at this sad hour the many and various ties which link our countries and their universities, and we most earnestly hope that your country will emerge successfully from this ordeal to continue her great and beneficent mission of civilization and culture." A message of appreciation in reply was received from the Japanese Embassy, thanking the University of London for its expression of sympathy.

The Semon lecture for the year 1922-23, entitled "The advancement of laryngology," will be given at the rooms of the Royal Society of Medicine, 1, Wimpole Street, by Dr. A. Logan Turner, lecturer in laryngology, otology and rhinology in the University of Edinburgh, on Thursday, November 1st, at 5 p.m. The chair will be taken by Mr. Charles A. Parker, F.R.C.S. Admission is free, without ticket.

The Stansfeld lecture for 1923-24 will be delivered at Bedford College in February, 1924, by Mrs. H. A. L. Fisher, on "The endowment of motherhood," treated in its historical and scientific aspects.

Guy's Hospital Medical School.

The following scholarships have been awarded:

Open Scholarship in Arts: W. S. Baxter, J. W. Crow, equal £50 each. Scholarships for University Students: War Memorial Scholarship, R. Lurie, B.A.Oxon., £80; Open Scholarship, W. D. B. Read, B.A.Oxon., £80. Scholarships in Junior Science: Confined Scholarship, E. T. Conybeare, £100. Open Scholarship: R. E. Fossey, E. M. Sharples, equal £50 each.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Calendar for 1923-24.

The current *Calendar* of the Royal College of Surgeons has been issued this week; it includes, as usual, the report of the proceedings of Council, together with lists of officers, fellows, members, and diplomates, and the customary official information. In the period under review 49 diplomas of fellowship were issued, including one to a medical woman; 621 membership diplomas were issued, including 137 to women; the licence in dental surgery was issued to 238 persons, including 10 to women. The following are the numbers of diplomas granted during the year jointly with the Royal College of Physicians: Public Health, 66; Tropical Medicine and Hygiene, 39; Ophthalmic Medicine and Surgery, 24; Psychological Medicine, 21. The recipients of the D.P.H. included 12 women. Surgeon Vice-Admiral Sir Robert Hill, K.C.B., K.C.M.G., late Medical Director-General R.N., and Mr. J. Howard Mummery, C.B.E. (members of twenty years' standing) were admitted to the fellowship without examination. The subject of the Jacksonian prize essay for the year 1924 is "The Pathology, Diagnosis and Treatment of Oesophageal Obstruction." Dr. K. N. G. Bailey has been appointed the second Streatfeild scholar; his research will be carried out at St. Bartholomew's Hospital.

Amended regulations for the licence in dental surgery have been drawn up by the Board of Examiners in Dental Surgery and approved by the Council, these changes being rendered necessary by the alterations in the regulations for the diplomas of M.R.C.S. and L.R.C.P. Regulations for the issue of a diploma in laryngology and otology, in association with the Royal College of Physicians, have been drawn up and are now available for intending candidates. Examinations for the diploma will be held in December, 1923, and June, 1924. The regulations for the D.P.H. have been revised so as to bring them into conformity with the new regulations and rules issued by the General Medical Council; they will come into force on January 1st, 1924.

The financial report states that the income of the College, exclusive of income from Trust Funds, amounted to £42,967, or £3,152 more than in the previous year. The total expenditure in respect of revenue amounted to £38,090, or £4,838 more than in the previous year. The balance of the revenue account amounted to £4,877. In the year just completed more than £3,700 was expended out of revenue on structural and other alterations in the nature of capital expenditure. The Conservator's report states that the most noteworthy event concerning the history of the museum is the completion of the series illustrating the principles of pathology—the great series now exhibited on special stands on the floor of Room III. The Librarian in his report records that the *Lives of the Fellows* has now been carefully indexed, and the process has brought to light a considerable number of references of interest to medical historians at large, but especially to those in search of information as to the history of operative methods, views on disease, and hygiene. The valuable collection of letters relating to College affairs and medical politics during the last eighty years has now been catalogued and put in order.

The Services.

On October 1st Surgeon Rear-Admiral Joseph Chambers, C.B., C.M.G., took over the appointment of Director-General of the Medical Department of the Navy, in succession to Surgeon Vice-Admiral Sir Robert Hill, K.C.B., K.C.M.G., C.V.O.

THE BLANE MEDAL.

The gold medal founded by Sir Gilbert Blane, Bt., has been awarded by the Director-General of the Medical Department of the navy and the Presidents of the Royal College of Physicians and the Royal College of Surgeons to Surgeon Lieutenant-Commander Julian L. Priston, M.B., M.R.C.P., D.P.H., R.N., who obtained a first-class certificate at the examination held in February last for promotion to the rank of Surgeon Commander.

DEATHS IN THE SERVICES.

Lieut.-Colonel de Vere Condon, Indian Medical Service (ret.), died at Waltham Abbey on September 13th, from illness contracted on active service in Persia, aged 49. He was born on April 13th, 1874, the son of the late Major E. H. Condon, and educated at Trinity College, Dublin, where he graduated B.A. in 1895, M.B., B.Ch., and B.A.O. in 1897, and M.D. in 1906. He took the diploma of the London School of Tropical Medicine in 1912, and the D.T.M. and H. at Cambridge in 1913. He entered the I.M.S. as surgeon lieutenant on January 28th, 1898, attained the rank of

lieutenant-colonel in 1917, was transferred temporarily to the non-effective list, on account of ill health, in September, 1920, and retired in July, 1921. Soon after joining he served in the Chinn war of 1900, and took part in the relief of Peking, receiving the medal with clasp. He then joined the political department, and successively held the posts of Residency Surgeon in the Persian Gulf, at Bushire, and as Agency Surgeon of Deoli, and subsequently of Kotah and Jhalawar, in Rajputana. At the beginning of the recent war he rejoined for military duty, serving from November, 1914, to March, 1916, as medical officer of the 106th Hazara Pioneers, when he took part in the operations in Baluchistan in June and July, 1915. From March to May, 1916, he served in the Indian Expeditionary Force in Mesopotamia, and from the middle of 1916 in the operations in Persia, as senior medical officer of the Shiraz Column.

Surgeon Captain Edward Dominic Joseph O'Malley, R.N. (retired), of Southsea, died suddenly at Haslar Hospital on September 20th, aged 51. He was the son of the late Deputy Inspector-General O'Malley, R.N., and was educated at Middlesex Hospital, taking the M.R.C.S. and L.R.C.P.Lond. in 1895. Entering the navy as surgeon in 1897 he attained the rank of surgeon commander on May 25th, 1911, and retired with the honorary rank of surgeon captain on August 18th, 1922. He leaves a widow but no children.

Medical News.

A DISCUSSION on the use of insulin in general practice will be held by the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on Tuesday, October 9th, at 4.30 p.m. The subject will be introduced by Professor H. Maclean, Dr. George Graham, and Professor J. J. R. Macleod of Toronto.

THE annual general meeting of the West Kent Medico-Chirurgical Society will be held on Friday, October 12th, at 8.45 p.m., at the Miller Hospital, Greenwich, S.E.10. Clinical cases will be shown by Mr. Willmott Evans, Mr. C. A. Joll, Dr. H. Nockolds, D.S.O., and Dr. H. Pritchard.

IN order to further the study and teaching of dermatology in London a comprehensive scheme of co-operation has been completed in connexion with St. John's Hospital for Diseases of the Skin. The teaching will be carried out at St. John's Hospital in Leicester Square, under the auspices of the London School of Dermatology; it will be conducted by the honorary medical staff of the hospital, together with the physicians in charge of the dermatological departments of the twelve London hospitals with undergraduate schools attached. Full details will be published later, but in the meantime attention may be drawn to the announcement which appears in our advertisement columns of lectures to be given on Tuesdays and Thursdays at 5 p.m. during the winter session.

THE sixth congress of the Spanish Association of Urology will be held in Madrid, under the presidency of Dr. Barragán, from October 17th to 20th. The subjects to be discussed are: Hypogastric cystoscopy, introduced by Dr. Camiña of Bilbao, and indications for operation in reno-ureteral lithiasis, introduced by Dr. Miraved of Madrid.

THE thirty-second French Congress of Surgery will be held in Paris from October 8th to 13th, with Dr. Témoin as president. Drs. Jeanbraut and Pauchet will open a discussion on blood transfusion, Drs. Bégouin and Savariaud on the surgical treatment of genital prolapse, and Drs. P. Mathieu and Villaret on non-calculous obliterations of the chief biliary passages. Further information may be obtained from the secretary of the congress, 12, Rue de Seine, Paris (VI).

THE annual health week of the Deptford Borough Council is being held this week in the Borough Hall, New Cross, concluding on Friday, October 5th. The programme includes lectures, infant consultations, and two films dealing with public health subjects; there are also numerous stalls exhibiting infant foods, model meals, model garments, and so forth.

THE fourteenth congress of the Italian Society of Orthopaedics will be held in Rome on October 23rd, when a discussion on the treatment of long-standing irreducible dislocation of the hips will be opened by Professor Gazzotti. There will be a discussion also on articular rheumatism in infancy, introduced by Professor Cattaneo. Further information can be obtained from the secretary, Clinica Ortopedica, Policlinico, Rome.

THE legislatures of the States of Washington and Oregon recently passed laws prohibiting the manufacture and sale of margarines containing vegetable oils, but trading interests in both States have succeeded in getting the laws suspended until November, 1924, when they will be submitted to a referendum.

THE Royal Medical Benevolent Fund (11, Chandos Street, London, W.1) has received from Sir Thomas Barlow a donation of £300, which has been invested for the benefit of the annuitants.

SIR ROBERT JONES, who is chairman of the Central Committee for the Care of Cripples, addressed a large meeting of voluntary workers among the 9,000 cripples on the register of the Shaftesbury Society and Ragged School Union at the John Kirk House, John Street, Theobald's Road, London, on September 28th, with Dr. T. N. Kelynack in the chair. Sir Robert Jones emphasized the need of a national scheme for dealing with the hundred thousand juvenile cripples in this country, and illustrated from the organization already in being in Shropshire and Oxfordshire the kind of provision that is possible on a national scale.

THE Lancashire Insurance Committee recently discussed a proposal to assist M. Spahlinger of Geneva to proceed with his production of serums and vaccines for the treatment of tuberculosis. It was recorded that in May last a deputation from the Committee visited the Ministry of Health to seek approval for a grant of £1,000 to be made for this purpose out of the local General Purposes Fund. Dr. H. F. Oldham of Morecambe challenged a statement that the medical profession accepted the Spahlinger treatment as effective. The proposal that a subcommittee should go to Switzerland to investigate the financial position was defeated by 13 votes to 10, and a motion that the whole matter be referred back was carried.

THE Right Hon. Sir William Joynson-Hicks, Bt., M.P., Minister of Health, has appointed the Lord Erskine, M.P., to be his parliamentary private secretary, Mr. Douglas Veale, of the Ministry of Health, to be his private secretary, and Mr. H. Nevil Rucker, of the Ministry of Health, to be his assistant private secretary.

THE annual dinner of the Chelsea Clinical Society will be held at the Café Royal, Regent Street, on Tuesday, October 30th, at 7 for 7.30 p.m. The honorary secretary is Dr. P. Seymour Price, 41, Sloane Gardens, S.W.1.

THE Chalmers gold medal for the best work on tropical medicine by investigators under the age of 45 has been awarded to Dr. Roubaud, general secretary of the Société de Pathologie exotique of Paris.

PROFESSOR BERGONIÉ of Bordeaux and Dr. Calmette, sub-director of the Paris Institut Pasteur, have been nominated Grand Officers of the Legion of Honour.

DR. BELA SCHICK, who invented the well known test for diphtheria susceptibility, has been made an extraordinary professor of pediatrics in the University of Vienna.

AT the meeting of the French Association of Urology in Paris on October 10th, when Professor André of Nancy will preside, the chief subject for discussion will be the treatment of gonorrhoea by serotherapy and vaccinotherapy.

THE Berlin Medical Society has closed its library owing to financial stress.

THE Chartered Society of Massage and Medical Gymnastics is holding its annual congress on October 4th, 5th, and 6th. The proceedings opened at the Wigmore Hall on Thursday morning, when Professor G. Elliot Smith delivered a lecture on "Muscles and nerves." In the afternoon Dr. Bellis Clayton gave a demonstration at King's College Hospital, and in the evening Mr. A. S. Blundell Bankart gave a lecture on "Scoliosis." On Friday lectures will be delivered at the Wigmore Hall by Dr. G. H. Hunt and Professor F. R. Fraser, and Miss Driver will give a demonstration of eurythmics at the Northampton Polytechnic Institute at 3 p.m. On Saturday Sir Alfred Fripp will give a lecture at 11 a.m. at the Wigmore Hall on "The knee-joint."

THE chief subjects for discussion at the meeting in Paris on October 12th of the French Society of Orthopaedics will be pes cavus, opened by Dr. Laroyenne of Lyons; cysts of bone (omitting hydatid cysts), opened by Dr. Roederer of Paris; and congenital elevation of the scapula, opened by Dr. Delchef of Brussels.

THE *Journal of the American Medical Association* states that approximately 10.6 per cent. of the graduating classes of 1920 and 1921 at the United States Naval Academy failed to attain the minimum height for officers of 5 ft. 6 in., and an attempt was made to stimulate growth in a group of undersized midshipmen, who volunteered for the experiment, by endocrine therapy. The conclusions arrived at by Captain D. N. Carpenter and Lieutenant D. Ferguson, of the United States Navy, were as follows: growth is not stimulated by thyroid and pituitary therapy in persons at or near maturity; preparations of anterior pituitary extract appeared to be inert as growth stimulants in these men, when administered orally; there is possibly an appreciable percentage of thyropenia in the United States.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that *ALL* letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra Westrand, London;* telephone, 2630, Gerrard.

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"M. R." submits the following query: A, B, and C had equal shares in a practice; A retired, selling his one-third share to B and C, who sell a one-sixth share in the practice to D. What proportion of A's expenses should D be allowed?

*** The question does not really arise. For the year following the change B, C, and D are liable to be assessed on the average profits of the previous three years, taking A's actual expenses into account for each of those years. D will, of course, be liable in respect of one-sixth share of that amount, and B and C in respect of five-twelfths each. When the profits are being calculated for the year during which D was a partner his actual expenses should, of course, be taken and not estimated by reference to A's. For instance, for the second income tax year after the change in the practice B, C, and D will be jointly liable on an assessment calculated on an average of three years, two of which will be affected by A's actual expenses and one year by D's actual expenses.

"M. D." has been refused deductions for (*a*) the annual subscription to a local medical society, and (*b*) his subscription to the International Radiological Conference and the cost of his attendance thereat.

*** (*a*) "M. D." can deduct a proportion of his subscription, determined by the ratio of the total subscriptions to the society to the society's expenditure on furthering the interests of its members. (*b*) If the expenditure was for the purpose of extending his own knowledge—or that of the world generally—it cannot be deducted as an expense of earning his income; it is in some respects capital expenditure analogous to the cost of improving the professional equipment.

"ONLY ONE LUNG"?

"E. K." would like to know if it is really true that Grace, the famous cricketer, had from his childhood only one lung. In a book, *The Best I Remember*, 1922, by Arthur Porritt (Cassell and Co., Ltd.), it is stated that Grace affirmed "that he had only one lung, and had, in fact, had only one lung since his childhood."

LETTERS, NOTES, ETC.

DIABETES AND INSULIN: CORRECTION.

SIR THOMAS HORDER asks us to correct a slip in the report of his presidential remarks introducing the discussion on insulin in the Section of Medicine. On page 445 of the JOURNAL of September 15th, thirteen lines from the end of the page, the words "If I were asked . . . modern conception of *diabetes*," should read "modern conception of *diet*."

CONGENITAL DEFORMITY.

DR. THOS. CARRUTHERS (Kilbarchan, Renfrewshire) writes: Dr. Walker (September 22nd, p. 546) has only to refer to Gould and Pyle's *Anomalies and Curiosities of Medicine* (Rebman, W. B. Saunders, 1897), Chap. IV, "Minor Terata," to find all the information he desires. My copy was picked up second-hand many years ago, and the book is doubtless out of print, but I shall be glad to put it at Dr. Walker's disposal for reference. The book is a wonderful collection of oddities in medicine and surgery from about the days of Adam, and is profusely illustrated. Reference to it is necessary before deciding that anything extraordinary is an extraordinary thing.

DR. HENRY H. HAWARD (Northwich) writes: When a medical student at St. Thomas's Hospital in July, 1892, I delivered a poor woman, in a loft over a stable off Kennington Lane, of a female child having little or no vestiges of arms or legs, apparently precisely similar to that recorded in your issue of September 22nd by Dr. John Walker of Paisley. The child attempted to breathe, but artificial respiration was practically impossible, and it died after a few minutes. The cord was short and absolutely untwisted. I remember well how the presentation puzzled me until the vulva was exposed, and how much difficulty there was in delivering the head. There was practically no furniture in the room and not even a basin or a cup. There were the remains of a bed but no bedclothes. The poor woman was impoverished and glad to accept 5s. and allow me to take the body away, and I took it to the hospital museum, where Professor Shattock dissected it and set it up as a specimen. It is figured in Treves's *System of Surgery*, 1896 edition, vol. ii, p. 87.

HERPES AND VARICELLA.

DR. C. H. SEDGWICK (Weedon) writes: The connexion between herpes and varicella is well brought out in the following instance: A few days ago, whilst on a visit to some friends, I learned that my hostess, the mother of three young children, had just recovered from a moderately severe attack of herpes affecting the right arm and shoulder. I remarked to her that now possibly her children would develop chicken-pox. To-day, six days afterwards, I hear this has actually happened, her eldest child, 4 years of age, having developed the disease. I understand there is no other known source of infection.

DISLOCATION OF SEMILUNAR CARTILAGE: NATURE'S CURE.

DR. CHARLES J. HILL AITKEN (Kilnhurst, near Rotherham) writes: Some ten years ago a middle-aged man took part in a game of hockey "to fill a gap," and, unused to the exercise, damaged his knee. The diagnosis was undoubtedly dislocation of the left internal semilunar cartilage. He was unable to lie up. Two years ago the cartilage would slip out under very slight provocation. Luckily there never was synovitis, and if the cartilage slipped out of place easily it would as easily slip back into position. The patient then got work that involved much walking and bicycling on country roads. Six months later it suddenly struck him his cartilage had ceased to bother him. The other day he told me that for eighteen months his cartilage had never once slipped out. Presumably the exercise of walking and cycling had so strengthened the thigh muscles that they were able to keep the cartilage in its place, although it is not likely that it is fixed.

PULMONARY TUBERCULOSIS IN A YOUNG CHILD.

DR. W. BALY PEACOCK (London) writes: A girl of 4½ years was brought to me with the complaint that she had a heavy cold which she "did not seem to throw off" and that she was losing weight. On examination she appeared thin and anaemic but quite cheerful. The temperature was normal. There was no undue prominence of the superficial veins on the thorax. On percussion there was a large area of dullness on the right side over the position of the lower lobe of the lung. On auscultation there were signs of a bronchitic type over the left lung and also to some extent over the right one, but over the area dull on percussion was marked tubular breathing and numerous crepitations. I found the child had a cough, but no sweating at night, nor was there any history of her being in contact with any tuberculous person. I gave the mother a sterile bottle and she was able to persuade the child to spit into it. The borough tuberculosis officer, Dr. MacDonald, kindly examined this and found numerous tubercle bacilli present. He afterwards examined the child and agreed with me that it was undoubtedly a case of tuberculosis of the lungs of an adult type. From the literature I have at hand on the subject it would appear to be rather an unusual type for so young a child.

UNUSUAL POSITION OF CHILD DURING DELIVERY.

"COUNTRY G. P." writes: Your correspondent Dr. W. F. Moore (September 29th, p. 565) has not mentioned the condition of the mother and child after the prolonged labour with the head in an unusual position.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33, 36, and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34, 35, and 36.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *159*.